

| L Number | Hits  | Search Text  | DB  | Time stamp       |
|----------|-------|--|---|------------------|
| 1        | 2     | "2001251228"   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/04 16:09 |
| 2        | 0     | kr20008048   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/04 16:44 |
| 3        | 2     | "20020064146"  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/04 16:44 |
| 4        | 21451 | (nec adj corporation).as.  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/04 16:48 |
| 5        | 1424  | ((nec adj corporation).as.) and sch or (synchronization adj channel)   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/04 16:48 |
| 6        | 40    | ((((nec adj corporation).as.) and sch or (synchronization adj channel)) and transmit adj diversity                                       | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/04 16:49 |
| 7        | 22    | (((((nec adj corporation).as.) and sch or (synchronization adj channel)) and transmit adj diversity) and (presence or absence or status) | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/04 16:49 |
| -        | 979   | 375/130.ccls.  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:23 |
| -        | 16    | 375/130.ccls. and transmit adj diversity   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:28 |
| -        | 15    | (375/130.ccls. and transmit adj diversity) and detect\$3   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:29 |
| -        | 7     | ((375/130.ccls. and transmit adj diversity) and detect\$3) and (complex adj conjugate)   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:29 |
| -        | 2     | ((((375/130.ccls. and transmit adj diversity) and detect\$3) and (complex adj conjugate)) and @ad<=19991227                              | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:29 |
| -        | 458   | 375/267.ccls.  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:28 |
| -        | 16    | (375/130.ccls. and transmit adj diversity) and transmit adj diversity  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:28 |
| -        | 66    | 375/267.ccls. and transmit adj diversity   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:28 |

|   |        |   |   |                  |
|---|--------|---|---|------------------|
| - | 38     | (375/267.ccls. and transmit adj diversity) and detect\$3  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:29 |
| - | 18     | ((375/267.ccls. and transmit adj diversity) and detect\$3) and (complex adj conjugate)                    | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:29 |
| - | 5      | ((375/267.ccls. and transmit adj diversity) and detect\$3) and (complex adj conjugate)) and @ad<=19991227 | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:45 |
| - | 132186 | detection adj (method or circuit)   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:46 |
| - | 25     | (detection adj (method or circuit)) and (transmit adj diversity)  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:46 |
| - | 5      | ((detection adj (method or circuit)) and (transmit adj diversity)) and @ad<=19991227                      | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:48 |
| - | 75     | cpich and sch   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:49 |
| - | 25     | (cpich and sch) and (transmission or transmit\$1) adj diversity   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:50 |
| - | 7      | ((cpich and sch) and (transmission or transmit\$1) adj diversity) and complex adj conjugate               | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:53 |
| - | 488025 | nec.as.   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:54 |
| - | 45     | nec.as. and (transmission or transmit) adj diversity  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:54 |
| - | 0      | (nec.as. and (transmission or transmit) adj diversity) and cpmlex adj conjugate                           | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:55 |
| - | 1      | (nec.as. and (transmission or transmit) adj diversity) and complex adj conjugate                          | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:56 |
| - | 10087  | okuyama.in.   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 15:57 |
| - | 2      | okuyama.in. and (complex adj conjugate)   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 16:44 |

|   |     |   |   |                  |
|---|-----|---|---|------------------|
| - | 8   | modulati\$3 adj2 sch  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 16:45 |
| - | 0   | (modulati\$3 adj2 sch) and @ad<=19991227  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 16:45 |
| - | 2   | (modulat\$3 adj2 sch) and @ad<=19991227   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 16:46 |
| - | 14  | modulat\$3 adj2 sch   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/02/12 16:46 |
| - | 90  | modulation with ((sch) or (synchronization adj channel))  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:24 |
| - | 1   | (modulation with ((sch) or (synchronization adj channel))) and (presence or absence) near diversity | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:25 |
| - | 8   | (modulation with ((sch) or (synchronization adj channel))) and diversity                            | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:30 |
| - | 1   | ((modulation with ((sch) or (synchronization adj channel))) and diversity) and @ad<=19991227        | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:26 |
| - | 705 | transmit adj diversity  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:30 |
| - | 465 | (transmit adj diversity) and determin\$3  | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:30 |
| - | 81  | ((transmit adj diversity) and determin\$3) and "1" and "-1"   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:31 |
| - | 14  | ((((transmit adj diversity) and determin\$3) and "1" and "-1" ) and @ad<=19991227                   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:33 |
| - | 8   | detecting with (transmit adj diversity)   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:39 |
| - | 2   | (detecting with (transmit adj diversity)) and @ad<=19991227   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:34 |
| - | 119 | 370/334.ccls.   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:40 |

|   |     |   |   |                  |
|---|-----|---|---|------------------|
| - | 1   | 370/334.ccls. and detect\$3 with (transmit adj diversity) | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:41 |
| - | 338 | 455/101.ccls.   | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:41 |
| - | 5   | 455/101.ccls. and detect\$3 with (transmit adj diversity) | USPAT;<br>US-PGPUB;<br>EPO; JPO;<br>DERWENT | 2004/03/01 10:41 |



# STIC Search Report

## EIC 2600

STIC Database Tracking Number: 115614

TO: Lawrence Williams  
Location: PK2-3A30  
Art Unit : 2634  
Thursday, March 04, 2004

Case Serial Number: 09/74075

From: Vamshi Kalakuntla  
Location: EIC 2600  
PK2-3C03  
Phone: 306-0254

Vamshi.kalakuntla@uspto.gov

### Search Notes

Dear Lawrence Williams;

740975

Attached please find the results of your search request 09/74075.→

I used the search strategy you suggested during the reference interview.

I searched the standard Dialog files, IBM TDBs, IEEE, DTIC STINET and the Internet.

If you would like a re-focus please let me know.

Please feel free to contact me if you have questions or concerns. Thank you and have a great day.

*Please take a moment and fill out the attached feedback form. Thank you.*



? show files

File 344:Chinese Patents Abs Aug 1985-2003/Nov

(c) 2003 European Patent Office

File 347:JAPIO Oct 1976-2003/Oct(Updated 040202)

(c) 2004 JPO & JAPIO

File 350:Derwent WPIX 1963-2004/UD,UM &UP=200415

(c) 2004 Thomson Derwent

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| Set | Items  | Description             |
|-----|--------|-------------------------|
| S1  | 1146   | TRANSMI?(3N)DIVERS?     |
| S2  | 224049 | MODULAT?                |
| S3  | 581    | SYNCHRONI?(N)CHANNEL? ? |
| S4  | 1      | S1 AND S2 AND S3        |

4/3,K/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

014291537 \*\*Image available\*\*  
WPI Acc No: 2002-112238/200215

**Apparatus and method for searching for cells in wireless communication system**

Patent Assignee: KOREA ELECTRONICS & TELECOM RES INST (KOEL-N)

Inventor: BANG S C; KIM J H; KIM T J; BAHNG S C

Number of Countries: 001 Number of Patents: 002

Patent Family:

| Patent No     | Kind | Date     | Applicat No | Kind | Date     | Week     |
|---------------|------|----------|-------------|------|----------|----------|
| KR 2001081863 | A    | 20010829 | KR 20008048 | A    | 20000219 | 200215 B |
| KR 353840     | B    | 20020927 | KR 20008048 | A    | 20000219 | 200322   |

Priority Applications (No Type Date): KR 20008048 A 20000219

Patent Details:

| Patent No     | Kind | Lan | Pg | Main IPC    | Filing Notes                        |
|---------------|------|-----|----|-------------|-------------------------------------|
| KR 2001081863 | A    |     | 1  | H04B-001/76 |                                     |
| KR 353840     | B    |     |    | H04B-001/76 | Previous Publ. patent KR 2001081863 |

Abstract (Basic):

... of a slot synchronization search part(210), a frame synchronization and code group search part(220), a cell spreading code search part(230), and a **transmission diversity** search part(240). The slot synchronization search part(210) acquires slot synchronization using a main SCH( **Synchronization CHannel** ). The frame synchronization and code group search part(220) receives a sub SCH in accordance with the slot synchronization of the slot synchronization search part...

...230) searches for a cell spreading code using a spreading code corresponding to the acquired code group, adjusting timing to the acquired frame synchronization. The **transmission diversity** search part(240) receives a common pilot channel using a spreading code corresponding to the cell spreading code acquired from the cell spreading code search part(230) and estimates the phase of a channel. Detecting a **modulated** signal from the main SCH and the sub SCH, the **transmission diversity** search part(240) acquires the status of **transmission diversity** .

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File 2:INSPEC 1969-2004/Feb W4  
     (c) 2004 Institution of Electrical Engineers  
 File 6:NTIS 1964-2004/Feb W5  
     (c) 2004 NTIS, Intl Cpyrght All Rights Res  
 File 8:EI Compendex(R) 1970-2004/Feb W4  
     (c) 2004 Elsevier Eng. Info. Inc.  
 File 34:SciSearch(R) Cited Ref Sci 1990-2004/Feb W4  
     (c) 2004 Inst for Sci Info  
 File 35:Dissertation Abs Online 1861-2004/Feb  
     (c) 2004 ProQuest Info&Learning  
 File 65:Inside Conferences 1993-2004/Feb W5  
     (c) 2004 BLDSC all rts. reserv.  
 File 94:JICST-EPlus 1985-2004/Feb W4  
     (c) 2004 Japan Science and Tech Corp (JST)  
 File 95:TEME-Technology & Management 1989-2004/Feb W3  
     (c) 2004 FIZ TECHNIK  
 File 99:Wilson Appl. Sci & Tech Abs 1983-2004/Jan  
     (c) 2004 The HW Wilson Co.  
 File 144:Pascal 1973-2004/Feb W4  
     (c) 2004 INIST/CNRS  
 File 233:Internet & Personal Comp. Abs. 1981-2003/Sep  
     (c) 2003 EBSCO Pub.  
 File 434:SciSearch(R) Cited Ref Sci 1974-1989/Dec  
     (c) 1998 Inst for Sci Info  
 File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13  
     (c) 2002 The Gale Group  
 File 603:Newspaper Abstracts 1984-1988  
     (c) 2001 ProQuest Info&Learning  
 File 483:Newspaper Abs Daily 1986-2004/Mar 03  
     (c) 2004 ProQuest Info&Learning

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| Set | Items  | Description                    |
|-----|--------|--------------------------------|
| S1  | 5730   | TRANSMI?(3N)DIVERS?            |
| S2  | 910917 | MODULAT?                       |
| S3  | 445    | SYNCHRONI?(N)CHANNEL? ?        |
| S4  | 0      | S1 AND S2 AND S3               |
| S5  | 1311   | S1 AND S2                      |
| S6  | 2938   | AU=(OKUYAMA, T? OR OKUYAMA T?) |
| S7  | 3047   | CO=NEC                         |
| S8  | 0      | (S6 OR S7) AND S5              |
| S9  | 1      | (S6 OR S7) AND S1              |

9/3,K/1 (Item 1 from file: 583)  
DIALOG(R)File 583:Gale Group Globalbase(TM)  
(c) 2002 The Gale Group. All rts. reserv.

05906447  
Digital network trials pave way to multimedia  
JAPAN: TELECOMMUNICATION REVOLUTION IN NAGANO  
The Nikkei Weekly (NW) 8 Nov 1993 p.8  
Language: ENGLISH

... affiliated body and four private firms that include NEC Corp. and Toshiba Corp. The first stage of the experiment involves turning TV cable lines into "diversified digital transmission networks" that permit the transmission of digitally clear voice and data on cables that normally transmit TV and video shows to 62,000 homes. The...

COMPANY: LCV; TOSHIBA; NEC ; CABLE TELEVISION KEY TECHNOLOGY RESEARCH  
?

File 344:Chinese Patents Abs Aug 1985-2003/Nov  
(c) 2003 European Patent Office  
File 347:JAPIO Oct 1976-2003/Oct (Updated 040202)  
(c) 2004 JPO & JAPIO  
File 348:EUROPEAN PATENTS 1978-2004/Feb W04  
(c) 2004 European Patent Office  
File 349:PCT FULLTEXT 1979-2002/UB=20040226,UT=20040219  
(c) 2004 WIPO/Univentio  
File 350:Derwent WPIX 1963-2004/UD,UM &UP=200415  
(c) 2004 Thomson Derwent

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| Set | Items  | Description                                     |
|-----|--------|---|
| S1  | 2291   | AU=(OKUYAMA, T? OR OKUYAMA T?)                  |
| S2  | 8432   | CO=NEC  |
| S3  | 10719  | S1 OR S2  |
| S4  | 3143   | TRANSMI? (3N) DIVERS?                           |
| S5  | 390999 | MODULAT?  |
| S6  | 1526   | SYNCHRONI? (N) CHANNEL? ?                       |
| S7  | 56     | S3 AND S4                                       |
| S8  | 12     | S7(S) S5  |
| S9  | 1      | S7(S) S6  |
| S10 | 13     | S8 OR S9  |
| S11 | 1      | S7 AND IC=(H04K-001/00 OR H04B-015/00)          |
| S12 | 13     | S10 OR S11                                      |
| S13 | 13     | IDPAT (sorted in duplicate/non-duplicate order) |
| S14 | 12     | IDPAT (primary/non-duplicate records only)      |

14/3,K/1 (Item 1 from file: 350)  
DIALOG(R)File 350:Derwent WPIX  
(c) 2004 Thomson Derwent. All rts. reserv.

014000129 \*\*Image available\*\*  
WPI Acc No: 2001-484343/200153  
XRPX Acc No: N01-358520

Transmission diversity detection circuit for spread spectrum  
communication system, computes value of channel symbol relation and  
recognizes sign to judge transmission diversity  
Patent Assignee: NEC CORP (NIDE ); NIPPON ELECTRIC CO (NIDE ); OKUYAMA T  
(OKUY-I)

Inventor: OKUYAMA T

Number of Countries: 030 Number of Patents: 005

Patent Family:

| Patent No      | Kind | Date     | Applicat No   | Kind | Date     | Week     |
|----------------|------|----------|---------------|------|----------|----------|
| EP 1113615     | A2   | 20010704 | EP 2000128288 | A    | 20001222 | 200153 B |
| AU 200072518   | A    | 20010628 | AU 200072518  | A    | 20001222 | 200153   |
| US 20010006531 | A1   | 20010705 | US 2000740975 | A    | 20001221 | 200153   |
| CN 1304233     | A    | 20010718 | CN 2000137624 | A    | 20001227 | 200163   |
| JP 2001251228  | A    | 20010914 | JP 2000396464 | A    | 20001227 | 200168   |

Priority Applications (No Type Date): JP 99368599 A 19991227

Patent Details:

| Patent No  | Kind | Lan | Pg | Main IPC    | Filing Notes |
|--|------|-----|----|-------------|--------------|
| EP 1113615   | A2   | E   | 22 | H04L-001/06 |              |
| Designated States (Regional): AL AT BE CH CY DE DK ES FI FR GB GR IE IT<br>LI LT LU LV MC MK NL PT RO SE SI TR |      |     |    |             |              |
| AU 200072518   | A    |     |    | H04B-007/02 |              |
| US 20010006531   | A1   |     |    | H04K-001/00 |              |
| CN 1304233   | A    |     |    | H04J-013/02 |              |
| JP 2001251228  | A    |     | 11 | H04B-007/06 |              |

Transmission diversity detection circuit for spread spectrum  
communication system, computes value of channel symbol relation and  
recognizes sign to judge transmission diversity  
Inventor: OKUYAMA T

Abstract (Basic):

... 0asterisk+C2n,0asteriskasteriskS2n,0+C2n,1asteriskasteriskC2n,1,  
where C2n,0, C2n,1 are primary common pilot channel (CPICH) symbol and  
S2n,0, S2n,1 are **synchronization channel** (SCH) symbol.  
C2n,0asterisk, C2n,1asterisk, S2n,0asterisk, S2n,1asterisk are complex  
conjugates of CPICH and SCH symbols. A judging unit judges existence of  
**transmission diversity** based on positive and negative of calculated  
value. INDEPENDENT CLAIMS are also included for the following...

...a) **Transmission diversity** detection method...

...b) Recording medium for storing **transmission diversity** detection  
program

... The presence and absence of **transmission diversity** is  
detected quickly using arithmetic sign irrespective of error occurring  
in the reference frequencies of base station and terminals...

...The figure shows the block diagram of **transmission diversity**  
detection circuit...

...International Patent Class (Main): H04K-001/00

...International Patent Class (Additional): H04B-015/00

14/3,K/2 (Item 2 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

01660256

Antenna transmission and reception system  
Antennensystem zum Senden und Empfangen  
Systeme d'antennes pour emission/reception

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP),  
(Applicant designated States: all)

INVENTOR:

Shousei, Yoshida, c/o Nec Corporation, 7-1, Shiba 5-chome, Minato-ku,  
Tokyo, (JP)

LEGAL REPRESENTATIVE:

VOSSIUS & PARTNER (100314), Siebertstrasse 4, 81675 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 1365474 A2 031126 (Basic)

APPLICATION (CC, No, Date): EP 2003011100 030521;

PRIORITY (CC, No, Date): JP 2002146814 020521

DESIGNATED STATES: AT; BE; BG; CH; CY; CZ; DE; DK; EE; ES; FI; FR; GB; GR;  
HU; IE; IT; LI; LU; MC; NL; PT; RO; SE; SI; SK; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK

INTERNATIONAL PATENT CLASS: H01Q-003/26; H01Q-003/24; H01Q-021/08;  
H01Q-001/24

ABSTRACT WORD COUNT: 85

NOTE:

Figure number on first page: 8&10

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | 200348 | 1304       |
| SPEC A                             | (English) | 200348 | 5209       |
| Total word count - document A      |           |        | 6513       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 6513       |

...SPECIFICATION narrowing beams to transmit the modulation signals in parallel (MIMO transmission); and at least one mobile station having a receiver including reception antennas for receiving **transmission** data, a **diversity** demodulator for performing **diversity** demodulation to **transmission** data in order to communicate with the first base station group, and an MIMO demodulator for demodulating data transmitted in parallel in order to communicate...

...CLAIMS transmitter comprising;

a data serial-to-parallel converter for converting transmission data into M sequences, where M is an integer of 2 or more,

M **modulators** for **modulating** the M sequences of transmission data subjected to the serial-to-parallel conversion,

M beam formers for weighting respective **modulation** signals to form directional beams, and

M transmission antenna groups for transmitting M **modulation** signals in parallel, each **modulation** signal having the directional beams controlled by the beam former; and

a mobile station which has a receiver;  
wherein the receiver comprising;  
reception antennas for receiving transmission data,  
a diversity demodulator for performing diversity demodulation  
to data transmitted from the first base station group, and  
an MIMO (Multiple Input Multiple Output) demodulator for  
demodulating data transmitted in parallel from the second base  
station...

14/3,K/3 (Item 3 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

01447929  
Communication control method in mobile communication system and base  
station used therefor  
Kommunikationssteuerverfahren in einem Mobilkommunikationssystem und  
hierfur verwendete Basisstation  
Procede de commande de communication dans un systeme de communication  
mobile et station de base utilisee a cet effet

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP),  
(Applicant designated States: all)

INVENTOR:

Kojiro, Hamabe, NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo,  
(JP)

LEGAL REPRESENTATIVE:

VOSSIUS & PARTNER (100314), Siebertstrasse 4, 81675 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 1239689 A2 020911 (Basic)

EP 1239689 A3 031217

APPLICATION (CC, No, Date): EP 2002003217 020219;

PRIORITY (CC, No, Date): JP 200153451 010228; JP 2001148565 010518

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: H04Q-007/38

ABSTRACT WORD COUNT: 218

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | 200237 | 2888       |
| SPEC A                             | (English) | 200237 | 9809       |
| Total word count - document A      |           |        | 12697      |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 12697      |

...SPECIFICATION are different. The uplink DPCH is comprised of a DPCCH  
(Dedicated Physical Control Channel) and a DPDCH (Dedicated Physical Data  
Channel), and they are orthogonally modulated mutually. The DPCCH has  
pilot signals (dedicated), transmission power control information (TPC),  
feedback information (FBI) and communication data. While this FBI  
includes a CW (code word: specifying a primary base station) used for

SSDT (site selection **diversity** **transmission** : a mode wherein only the base station having the highest (primary) received power of the CPICH in the mobile station performs data transmission), the system...

14/3,K/4 (Item 4 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
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01367609

Delay control in time diversity transmitter  
Verzögerungssteuerregelung in einem Zeit-Diversity Sender  
Commande de delai dans un emetteur a diversite temporelle  
PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP),  
(Applicant designated States: all)

INVENTOR:

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, (DE)

PATENT (CC, No, Kind, Date): EP 1164718 A2 011219 (Basic)  
EP 1164718 A3 031126

APPLICATION (CC, No, Date): EP 2001113922 010607;

PRIORITY (CC, No, Date): JP 2000177110 000613

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;  
LU; MC; NL; PT; SE; TR

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: H04B-007/06; H01Q-003/26; H04B-001/04

ABSTRACT WORD COUNT: 70

NOTE:

Figure number on first page: 2

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | 200151 | 492        |
| SPEC A                             | (English) | 200151 | 2935       |
| Total word count - document A      |           |        | 3427       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 3427       |

...SPECIFICATION so that the difference in delay time among the transmission units is within a permissible value range.

## 2. Description of the Related Art

In a **transmission diversity** system in which the same **modulation** waves are transmitted from plural transmission units at the same time and the **modulation** timing is made coincident among these **modulation** waves at a reception point to thereby achieve a diversity gain, it is required that the **modulation** timing at the transmission output terminal is within a permissible value range (coincident desirably). Accordingly, it is required that plural **diversity** type **transmission** units reduce the difference in delay timing of **modulated** data thereof so that the difference is within a permissible value range.

Dispersion in delay time among circuit parts is considered as a factor of...

...carrying out high-speed data transmission or the like need the control

of the delay time in each transmission unit in order to implement a **diversity type transmitter** .

Fig. 1 is a diagram showing a transmitter used a conventional delay time control system.

According to the transmitter shown in Fig. 1, signals generated...

...even when a temperature variation or a secular change under operation occurs.

In order to attain the above object, according to the present invention, a **transmission diversity type transmitter** in which the same **modulation** waves are transmitted from plural transmission units at the same time by delaying a base band signal with delay circuits, and the **modulation** timing is made coincident among the **modulation** waves at a reception point to achieve a **diversity gain**, the **transmitter** comprising:

a detector for detecting an RF signal of each transmission unit and outputting a detection signal,

a comparator for comparing the detection signals output...carrying out high-speed data transmission or the like need the control of the delay time in each transmission unit in order to implement a **diversity type transmitter** .

Next, the operation will be described.

Since the RF signal is a modulation wave, the output power thereof is instantaneously varied at a rate proportional...

...CLAIMS A2

1. A **transmission diversity type transmitter** in which the same **modulation** waves are transmitted from plural transmission units at the same time by delaying a base band signal with delay circuits, and the **modulation** timing is made coincident among the **modulation** waves at a reception point to achieve a **diversity gain**, the **transmitter** comprising:

a detector for detecting an RF signal of each transmission unit and outputting a detection signal,

a comparator for comparing the detection signals output...

14/3,K/5 (Item 5 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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01132057

**Spread spectrum diversity transmitter/receiver**

**Spreizspektrumdiversitysender/-empfänger**

**Émetteur/recepteur en diversité a spectre étale**

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP),

(Applicant designated States: all)

INVENTOR:

Tsujimoto, Ichiro, NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo 108-01, (JP)

LEGAL REPRESENTATIVE:

von Samson-Himmelstjerna, Friedrich R., Dipl.-Phys. et al (12469), SAMSON & PARTNER Widenmayerstrasse 5, 80538 Munchen, (DE)

PATENT (CC, No, Kind, Date): EP 989688 A2 000329 (Basic)

EP 989688 A3 030709

APPLICATION (CC, No, Date): EP 99118881 990924;

PRIORITY (CC, No, Date): JP 98271432 980925

DESIGNATED STATES: AT; BE; CH; CY; DE; DK; ES; FI; FR; GB; GR; IE; IT; LI;

LU; MC; NL; PT; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI  
INTERNATIONAL PATENT CLASS: H04B-001/707; H04L-001/02; H04L-001/00;  
H04B-007/06; H04L-001/08  
ABSTRACT WORD COUNT: 115  
NOTE:

Figure number on first page: 5

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | 200013 | 1500       |
| SPEC A.                            | (English) | 200013 | 5580       |
| Total word count - document A      |           |        | 7080       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 7080       |

...SPECIFICATION of a receiving section of this conventional spread spectrum diversity transmitter/receiver.

As shown in Fig. 3, the transmitting section of this conventional spread spectrum **diversity transmitter** /receiver provides an error correction encoder 101, M-1 pieces of delay element whose delay time is ( $\tau$ ) M 1031)) to 103M-1)), M pieces of interleave circuit 1021)) to 102M)), M pieces of **modulator** 1051)) to 105M)), M pieces of spread spectrum circuit 1061)) to 106M)), a ...small and in which the characteristic of the bit error rate is improved.

According to the present invention, for achieving the objects, a spread spectrum **diversity transmitter** /receiver provides a spread spectrum **diversity transmitter** and a spread spectrum diversity receiver. And said spread spectrum **diversity transmitter** includes an error correction encoding means for performing an error correction encoding for a series of transmitting data, an interleave means for performing an interleave...

...from said plural delay means and for a signal directly outputted from said interleave means, and outputs signals of parallel data of M branches, plural **modulating** means for **modulating** said signals of parallel data of M branches outputted from said convolutional encoding means respectively, plural spread spectrum means for performing spread spectrums for signals outputted from said plural **modulating** means by respective different spread codes, a combining means for performing a code division multiplex by combining said outputs from said plural spread spectrum means...

...division multiplex signal. And said spread spectrum diversity receiver includes a receiving means for receiving said code division multiplex signal transmitted from said spread spectrum **diversity transmitter** , a branching means for making said signal received at said receiving means branch to M branches and outputs M branch signals, plural de-spread spectrum...

...spectrums for said M branch signals by using the same spread codes used at the time when the spread was performed at said spread spectrum **diversity transmitter** , plural demodulating means for demodulating said M branch signals performed the de-spread at said plural de-spread spectrum means, a Viterbi decoding means to...

...judging means, and an error correction decoding means for performing an error correction decoding corresponding to said error correction encoding means of said spread spectrum **diversity transmitter** for the data outputted from said deinterleave means.

According to the present invention, at a spread spectrum diversity transmitter/receiver of the present invention, a...in Figs. 3 and 4 have the same functions.

As shown in Fig. 5, the transmitting section of the first embodiment of the spread spectrum **diversity transmitter** /receiver of the present invention is constituted of an error correction encoder 101, an interleave circuit 102, two delay elements 1031)) and 1032)) whose delay time is different each other, a convolutional encoder 104 whose coding rate  $R = 3/4$ , four pieces of **modulator** 1051)) to 1054)), four pieces of spread spectrum circuit 1061)) to 1064)), a combining circuit 107, a transmitter 108 and a transmitting antenna 109.

Comparing with the transmitting section of the conventional spread spectrum **diversity transmitter** /receiver shown in Fig. 3, at the transmitting section of the first embodiment of the present invention, the number of diversity branches  $M = 4$ , and...

...disposed between the error correction encoder 101 and the delay elements 1031)) and 1032)), and the convolutional encoder 104 is added in front of the **modulators** 1051)) to 1054)).

An output signal from the interleave circuit 102 and output signals from the delay elements 1031)) and 1032)) are inputted to the...combining the output signals from the four spread spectrum circuits 1061)) to 1064)) at the combining circuit 107, the code division multiplex is performed for **diversity transmitting** signals of four branches. And the frequency conversion and the amplification are applied at the transmitter 108 for the code division multiplex signal performed at... spread spectrum diversity transmitter/receiver of the present invention.

As shown in Fig. 8, a transmitting section of the second embodiment of the spread spectrum **diversity transmitter** /receiver of the present invention provides two delay elements 1031)) and 1032)), a convolutional encoder 104 whose coding rate  $R = 3/4$ , four **modulators** 1051)) to 1054)), four spread spectrum circuits 1061)) to 1064)), a combining circuit 107, a transmitter 108 and a transmitting antenna 109.

As shown in...

14/3,K/6 (Item 6 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
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01112892

**Diversity receiver**  
**Diversity-Empfänger**  
**Recepteur a diversite**

PATENT ASSIGNEE:

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(Applicant designated States: all)

INVENTOR:

Yamamoto, Takeshi, NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo,  
(JP)

LEGAL REPRESENTATIVE:

von Samson-Himmelstjerna, Friedrich R., Dipl.-Phys. et al (12469), SAMSON  
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PATENT (CC, No, Kind, Date): EP 975101 A2 000126 (Basic)  
EP 975101 A3 021120

APPLICATION (CC, No, Date): EP 99114069 990720;

PRIORITY (CC, No, Date): JP 98205305 980721

DESIGNATED STATES: DE; SE

EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI

INTERNATIONAL PATENT CLASS: H04B-007/08; H04L-027/26

ABSTRACT WORD COUNT: 146

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | 200004 | 808        |
| SPEC A                             | (English) | 200004 | 2306       |
| Total word count - document A      |           |        | 3114       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 3114       |

...SPECIFICATION 1 and diversity receiver 2 as shown in Fig. 1.

Transmitter 1 comprises serial-parallel conversion circuit 3 for serial-parallel converting data to be **transmitted** to **diversity** receiver 2; inverse Fourier transform circuit 4 for inversely Fourier transforming the transmission data serial-parallel converted at serial-parallel conversion circuit 3; parallel-serial...

...for parallel-serial converting the transmission data inversely Fourier transformed at inverse Fourier transform circuit 4 to generate I, Q signals in time series; orthogonal **modulator** 6 for orthogonal **modulating** the I, Q signals generated at parallel-serial conversion circuit 5 to output the **modulated** signal as OFDM **modulated** signal; and antenna 7 for transmitting the OFDM **modulated** signal provided from orthogonal **modulator** 6 to diversity receiver 2.

Diversity receiver 2, in turn, comprises antennas 10a, 10b for receiving the OFDM modulated signal transmitted from transmitter 1; orthogonal...

14/3,K/7 (Item 7 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00951989

Diversity circuit

Diversity-Schaltung

Circuit a diversite

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP),  
(Proprietor designated states: all)

INVENTOR:

Ichihara, Masaki, NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo,  
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LEGAL REPRESENTATIVE:

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PATENT (CC, No, Kind, Date): EP 863620 A2 980909 (Basic)

EP 863620 A3 981230

EP 863620 B1 030507

APPLICATION (CC, No, Date): EP 98103017 980220;

PRIORITY (CC, No, Date): JP 9748685 970304

DESIGNATED STATES: DE; FR; GB; IT; NL; SE

INTERNATIONAL PATENT CLASS: H04B-007/08

ABSTRACT WORD COUNT: 117

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | 199837 | 1024       |
| CLAIMS B                           | (English) | 200319 | 801        |
| CLAIMS B                           | (German)  | 200319 | 712        |
| CLAIMS B                           | (French)  | 200319 | 925        |
| SPEC A                             | (English) | 199837 | 1744       |
| SPEC B                             | (English) | 200319 | 1557       |
| Total word count - document A      |           |        | 2768       |
| Total word count - document B      |           |        | 3995       |
| Total word count - documents A + B |           |        | 6763       |

...CLAIMS wherein differences in the delay times of the plurality of the delay circuits are sufficiently larger than differences in transmission times by multipaths produced on **transmission** lines.

5. A **diversity** circuit for receiving a spread spectrum **modulated** wave signal, the diversity-circuit comprising:

a first antenna (103) configured to receive a radio frequency signal and to output a first received signal;

a...

14/3,K/8 (Item 8 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

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00831944

Time diversity transmission-reception system

Zeitdiversity-Sender/Empfänger-Kommunikationssystem

Système de transmission-reception par diversité en temps

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome Minato-ku, Tokyo, (JP),  
(applicant designated states: FR;GB;IT)

INVENTOR:

Tsujimoto, Ichiro, c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku,  
Tokyo, (JP)

LEGAL REPRESENTATIVE:

Orchard, Oliver John (34501), JOHN ORCHARD & CO. Staple Inn Buildings  
North High Holborn, London WC1V 7PZ, (GB)

PATENT (CC, No, Kind, Date): EP 771084 A1 970502 (Basic)

APPLICATION (CC, No, Date): EP 96307318 961008;

PRIORITY (CC, No, Date): JP 95274330 951023

DESIGNATED STATES: FR; GB; IT

INTERNATIONAL PATENT CLASS: H04B-007/06; H04B-001/707; H04J-013/00;

ABSTRACT WORD COUNT: 165

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPAB97 | 586        |
| SPEC A                             | (English) | EPAB97 | 4523       |
| Total word count - document A      |           |        | 5109       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 5109       |

...ABSTRACT A1

A time **diversity** **transmission** -reception system has, on the transmit side, at least one delay means of a predetermined delay for providing at least a pair of delayed and undelayed data symbol sequences, at least a pair of **modulators** for **modulating** the data symbol sequences into

**modulated** intermediate frequency signals, and at least a pair of spread spectrum signal generators employing mutually different pseudo-random code sequences for code division multiplexing. On...

...SPECIFICATION 1(a) and 1(b) of the accompanying drawings which show respectively in block schematic form the transmit and receive sides of a conventional time **diversity transmission** -reception system, a data signal (data symbol sequence) "a" to be transmitted is split into two and supplied, one through delay means 101 (having delay  $t$ ) and the other directly, to a pair of **modulators** 102 for **modulation** into **modulated** intermediate frequency (IF) signals, and then to a pair of transmitters 103 of carrier wave radio frequencies (RF)  $f_1$ ) and  $f_2$ )), whose outputs are combined...

...the transmitter/receiver for the conventional system becomes more serious when the number of diversity branches is increased to more than two.

Another prior art **diversity transmission** -reception system, which is outlined in Japanese Patent Application Kokai Publication No. Sho 63-286027 entitled " **Transmission** -path **diversity transmission** system" and published November 22, 1988, has, as schematically shown in Fig. 2 of the accompanying drawings, a **modulator** 201 for a data signal, whose output is supplied to a first transmitting antenna 203 directly and also to a second transmitting antenna 204 through...

...circuit 209. The delay  $t$  introduced by delay circuit 202 is set at a value longer than one time slot assigned to each of the **modulating** data symbols. The transmission carrier wave transmitted from the first ... show a second embodiment of the present invention designed to meet such demand. Referring to Fig. 6(a) showing the transmit side of a time **diversity transmission** -reception system having four diversity branches, reference numerals 601, 602 and 603 denote delay means of delay  $t$ ,  $2t$ , and  $3t$ , respectively; 604, four **modulators** ; 605, four spread spectrum signal generators; 606, signal combiner; 607, RF transmitter; and 608, transmitting antenna. On the receive side shown in Fig. 6(b...

...four. Delay means 601 to 603 on the transmit side and delay means 613 to 615 on the receive side are for defining the four **diversity** branches on the **transmit** side and for restoring the timed relationship of the four branches on the receive side, respectively.

Referring to Fig. 7 illustrating the operation of the...

...signal generator, modulator means and demodulator means can be readily integrated into LSI's, making it possible to further reduce the manufacturing cost of the **diversity transmission** -reception system.

While the invention has been illustrated with reference to preferred embodiments, by way of example, it is to be understood that variations and...

CLAIMS 1. A time **diversity transmission** -reception system for transmitting a data signal (an)) by a radio frequency carrier wave having a plurality of diversity branches defined by a predetermined delay...

...at transmit side of said system at a stage prior to a plurality of means (102) for converting said data signal into a plurality of **modulated** intermediate frequency subcarriers, said converting means being assigned respectively to said diversity branches, characterized in that said system comprises on transmit side:  
a plurality of...

...for combining the outputs of said adaptive matched filters; and  
an adaptive equalizer (112) for equalizing the output of said combining means.

3. A time **diversity transmission** -reception system according to claim 2, in which the number of each of said **modulating** means, spread spectrum signal producing means, code division multiplexed signal processing means and adaptive matched filters is two, and in which the number of said delay means is one.
4. A time **diversity transmission** -reception system according to claim 2, in which the number of each of said **modulating** means, spread spectrum signal producing means, code division multiplexed signal processing means and adaptive matched filters is four, and in which the number of said...

14/3,K/9 (Item 9 from file: 348)  
DIALOG(R) File 348:EUROPEAN PATENTS  
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00815137

**Diversity receivers**

**Diversity-Empfänger**

**Recepteur a diversite**

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP),  
(Proprietor designated states: all)

INVENTOR:

Tsujimoto, Ichiro, c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku,  
Tokyo, (JP)

Fujimoto, Yoshiyuki, c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku,  
Tokyo, (JP)

LEGAL REPRESENTATIVE:

W.P. THOMPSON & CO. (101052), Celcon House 289-293 High Holborn, London,  
WC1V 7HU, (GB)

PATENT (CC, No, Kind, Date): EP 757456 A2 970205 (Basic)

EP 757456 A3 981111

EP 757456 B1 020508

APPLICATION (CC, No, Date): EP 96203037 910531;

PRIORITY (CC, No, Date): JP 90142238 900531; JP 90142239 900531; JP  
90289721 901025

DESIGNATED STATES: FR; GB; IT

RELATED PARENT NUMBER(S) - PN (AN):

EP 459823 (EP 91304948)

INTERNATIONAL PATENT CLASS: H04L-001/06; H04B-007/06

ABSTRACT WORD COUNT: 244

NOTE:

Figure number on first page: 2A 2B

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPAB97 | 757        |
| CLAIMS B                           | (English) | 200219 | 758        |
| CLAIMS B                           | (German)  | 200219 | 676        |
| CLAIMS B                           | (French)  | 200219 | 902        |
| SPEC A                             | (English) | EPAB97 | 3632       |
| SPEC B                             | (English) | 200219 | 3635       |
| Total word count - document A      |           |        | 4390       |
| Total word count - document B      |           |        | 5971       |
| Total word count - documents A + B |           |        | 10361      |

...SPECIFICATION corresponds to an integral multiple of symbol interval T. The delayed version of the transmit signal is modulated upon a carrier by transmitter 21A and transmitted by a diversity antenna 22A on a first diversity channel, while the nondelayed version of the transmit signal is modulated upon the same frequency carrier by transmitter 21B and transmitted by a diversity antenna 22B on a second diversity channel which is sufficiently spaced from antenna 22A.

At the receiving site of the system, the signal from antenna...

...SPECIFICATION corresponds to an integral multiple of symbol interval T. The delayed version of the transmit signal is modulated upon a carrier by transmitter 21A and transmitted by a diversity antenna 22A on a first diversity channel, while the nondelayed version of the transmit signal is modulated upon the same frequency carrier by transmitter 21B and transmitted by a diversity antenna 22B on a second diversity channel which is sufficiently spaced from antenna 22A.

At the receiving site of the system, the signal from antenna...

14/3,K/10 (Item 10 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
(c) 2004 European Patent Office. All rts. reserv.

00795661

Mobile radio communication system with transmitter diversity

Mobiles Funkkommunikationssystem mit Senderdiversity

Systeme de radiocommunication mobile emetteur en diversite

PATENT ASSIGNEE:

NEC CORPORATION, (236690), 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP),

(Applicant designated States: all)

INVENTOR:

Ichihara, Masaki, c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP)

Furuya, Yukitsuna, c/o NEC Corporation, 7-1, Shiba 5-chome, Minato-ku, Tokyo, (JP)

LEGAL REPRESENTATIVE:

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PATENT (CC, No, Kind, Date): EP 741465 A2 961106 (Basic)

EP 741465 A3 991222

APPLICATION (CC, No, Date): EP 96106624 960426;

PRIORITY (CC, No, Date): JP 95128891 950428

DESIGNATED STATES: DE; FR; GB; IT; NL; SE

INTERNATIONAL PATENT CLASS: H04B-007/06; H04B-017/00

ABSTRACT WORD COUNT: 160

NOTE:

Figure number on first page: 1

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPAB96 | 1015       |
| SPEC A                             | (English) | EPAB96 | 3811       |
| Total word count - document A      |           |        | 4826       |
| Total word count - document B      |           |        | 0          |
| Total word count - documents A + B |           |        | 4826       |

...SPECIFICATION diversity transmission is desired.

The present invention has been made to solve the conventional drawbacks described above, and has as its object to provide a transmission diversity system capable of notifying a base station of

optimal radio transmission system information obtained by causing a mobile station to measure an identification signal always transmitted from the base station, and of performing continuous, high-speed diversity transmission and stable reception at the mobile station in a CDMA (Code Division Multiple Access) scheme employing a spread spectrum modulation scheme.

In order to achieve the above object of the present invention, there is provided a transmission diversity system for selecting one of a plurality...and the optimal radio transmission system information is notified to the base station on the basis of this measurement. As a result, continuous, high-speed diversity transmission can be performed in the CDMA employing the spread frequency modulation scheme.

#### Brief Description of the Drawings

Fig. 1 is a block diagram showing the arrangement of a transmission diversity system according to the first embodiment...stable reception is performed in the mobile station 2 as in the first embodiment.

As can be apparent from the above description, according to a transmission diversity system of the present invention, a base station adds data to be transmitted and a plurality of types of identification signals different in a plurality...

...station. Since data is transmitted from one radio transmission system in the base station is transmitted on the basis of this information, continuous, high-speed diversity transmission can be performed, and stable reception can be performed at the mobile station in the CDMA scheme employing the spread spectrum modulation scheme. ...

14/3,K/11 (Item 11 from file: 348)  
DIALOG(R)File 348:EUROPEAN PATENTS  
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00771673

Spread spectrum diversity transmitter/receiver  
Spreizspektrumdiversitysender/-empfänger  
Émetteur/recepteur en diversite a spectre etale  
PATENT ASSIGNEE:

NEC Corporation, (236697), 7-1, Shiba 5-chome, Minato-ku, Tokyo 108-8001,  
(JP), (Proprietor designated states: all)

INVENTOR:

Tsujimoto, Ichiro, c/o NEC Corp., 7-1 Shiba 5-chome, Minato-ku, Tokyo  
108-01, (JP)

LEGAL REPRESENTATIVE:

Abnett, Richard Charles (27531), REDDIE & GROSE 16 Theobalds Road, London  
WC1X 8PL, (GB)

PATENT (CC, No, Kind, Date): EP 722227 A1 960717 (Basic)  
EP 722227 B1 020410

APPLICATION (CC, No, Date): EP 96300186 960110;

PRIORITY (CC, No, Date): JP 952741 950111

DESIGNATED STATES: FR; GB; IT

INTERNATIONAL PATENT CLASS: H04B-007/02

ABSTRACT WORD COUNT: 181

NOTE:

Figure number on first page: 3A 3B

LANGUAGE (Publication,Procedural,Application): English; English; English  
FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS A                           | (English) | EPAB96 | 523        |
| CLAIMS B                           | (English) | 200215 | 815        |
| CLAIMS B                           | (German)  | 200215 | 671        |
| CLAIMS B                           | (French)  | 200215 | 1011       |
| SPEC A                             | (English) | EPAB96 | 4018       |
| SPEC B                             | (English) | 200215 | 3684       |
| Total word count - document A      |           |        | 4542       |
| Total word count - document B      |           |        | 6181       |
| Total word count - documents A + B |           |        | 10723      |

...ABSTRACT A1

In a **diversity** transceiver, after coding **transmission** data by means of an error-correction coder (101), the data are divided into N branches, pass through a plurality of delay elements (102), undergo interleaving in an interleave circuit (103), primary **modulation** in a **modulator** (104), undergo spread-spectrum processing in a spread-spectrum circuit (105), and are coded/multiplexed in a synthesizer (106), and finally transmitted by a transmitter...

...a branch circuit (111), undergo inverse spread-spectrum processing in inverse spread-spectrum circuits (112), undergo demodulation in a demodulator (113) corresponding to the primary **modulation** on the transmission side, undergo de-interleaving at a de-interleave circuit (114), and after delay coordination at delay elements (115), undergo majority-discrimination at...

...SPECIFICATION performed at synthesis circuit 406 using independent diffusion codes for each branch. In other words, N branches of coded multiplexed channels are used in the **diversity transmission**. Each synthesized wave is transmitted from transmission antenna 408 by way of transmitter 407.

At the receiver, ...to provide a spread-spectrum diversity transmitter/receiver having a limited scale and moreover, that ensures constant and stable diversity branches.

The first spread-spectrum **diversity transmitter** /receiver according to the present invention includes:

a transmitter that includes error-correction coding means for error-correction coding data to be sent, delay means...

...by dividing output of the error-correction coding means into a plurality of branches, interleave means for interleaving each branch output of the delay means, **modulating** means for individually **modulating** each branch output of the interleave means, spread-spectrum means for spreading the spectrum of each branch output of the **modulating** means by differing diffusion codes, synthesizing means for synthesizing and coding/multiplexing the output of the spread spectrum means, and transmitting means for transmitting the...

...delay means, and error-correction decoding means for performing error-correction decoding of the discrimination data of the majority-discriminating means.

A second spread-spectrum **diversity transmitter** /receiver according to the present invention includes:

a transmitter that includes delay means for conferring differing delay times on each branch signal derived by branching data to be transmitted into a plurality of branches, interleave means for interleaving each branch output of the delay means, **modulating** means

for individually **modulating** each branch output of the interleave means, spread spectrum means for spreading the spectrum of each branch output of the **modulating** means by differing diffusion codes, synthesizing means for synthesizing and coding/multiplexing the output of the spread spectrum means, and transmitting means for transmitting the...

...SPECIFICATION performed at synthesis circuit 406 using independent diffusion codes for each branch. In other words, N branches of code multiplexed channels are used in the **diversity transmission**. Each synthesized wave is transmitted from transmission antenna 408 by way of transmitter 407.

At the receiver, the N branches of signals received at N...

...CLAIMS A1

1. A spread-spectrum **diversity transmitter** /receiver comprising: a transmitter that comprises error-correction coding means for error-correction coding data to be sent, delay means for conferring differing delay times...

...by dividing output of said error-correction coding means into a plurality of branches, interleave means for interleaving each branch output of said delay means, **modulating** means for individually **modulating** each branch output of said interleave means, spread-spectrum means for spreading the spectrum of each branch output of said **modulating** means by differing diffusion codes, synthesizing means for synthesizing and coding/multiplexing the output of said spread spectrum means, and transmitting means for transmitting the...

...delay means, and error-correction decoding means for performing error-correction decoding of said discrimination data of said majority-discriminating means.

2. A spread-spectrum **diversity transmitter** /receiver comprising: a transmitter that comprises delay means for conferring differing delay times to each branch signal derived by dividing transmission data into a plurality of branches, interleave means for interleaving each branch output of said delay means, **modulating** means for individually **modulating** each branch output of said interleave means, spread-spectrum means for spreading the spectrum of each branch output of said **modulating** means by means of differing diffusion codes, synthesizing means for synthesizing and coding/multiplexing the output of said spread spectrum means, and transmitting means for...

14/3,K/12 (Item 12 from file: 348)

DIALOG(R) File 348:EUROPEAN PATENTS

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00484259

Radio communication system

Funkübertragungssystem

Systeme de radiocommunication

PATENT ASSIGNEE:

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PATENT (CC, No, Kind, Date): EP 459823 A2 911204 (Basic)  
EP 459823 A3 930929  
EP 459823 B1 980805

APPLICATION (CC, No, Date): EP 91304948 910531;

PRIORITY (CC, No, Date): JP 90142238 900531; JP 90142239 900531; JP  
90289721 901025

DESIGNATED STATES: FR; GB; IT

INTERNATIONAL PATENT CLASS: H04L-001/06;

ABSTRACT WORD COUNT: 243

LANGUAGE (Publication,Procedural,Application): English; English; English

FULLTEXT AVAILABILITY:

| Available Text                     | Language  | Update | Word Count |
|------------------------------------|-----------|--------|------------|
| CLAIMS B                           | (English) | 9832   | 466        |
| CLAIMS B                           | (German)  | 9832   | 428        |
| CLAIMS B                           | (French)  | 9832   | 540        |
| SPEC B                             | (English) | 9832   | 3687       |
| Total word count - document A      |           |        | 0          |
| Total word count - document B      |           |        | 5121       |
| Total word count - documents A + B |           |        | 5121       |

...SPECIFICATION corresponds to an Integral multiple of symbol interval T.  
The delayed version of the transmit signal is modulated upon a carrier by  
transmitter 21A and transmitted by a diversity antenna 22A on a first  
diversity channel, while the nondelayed version of the transmit signal is  
modulated upon the same frequency carrier by transmitter 21B and  
transmitted by a diversity antenna 22B on a second diversity channel  
which is sufficiently spaced from antenna 22A.

At the receiving site of the system, the signal from antenna...

?

? show files

File 348:EUROPEAN PATENTS 1978-2004/Feb W04

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File 349:PCT FULLTEXT 1979-2002/UB=20040226,UT=20040219

(c) 2004 WIPO/Univentio

? ds

| Set | Items  | Description                                     |
|-----|--------|---|
| S1  | 1997   | TRANSMI? (3N) DIVERS?                           |
| S2  | 166950 | MODULAT?  |
| S3  | 945    | SYNCHRONI? (N) CHANNEL? ?                       |
| S4  | 1      | S1 (S) S2 (S) S3                                |
| S5  | 45     | S1 AND S2 AND S3                                |
| S6  | 0      | S5 AND IC=(H04K-001/00 OR H04B-015/00)          |
| S7  | 0      | S5 AND IC=(H04K-001 OR H04B-015)                |
| S8  | 36     | S5 AND IC=(H04K OR H04B)                        |
| S9  | 36     | IDPAT (sorted in duplicate/non-duplicate order) |
| S10 | 36     | IDPAT (primary/non-duplicate records only)      |

4/3,K/1 (Item 1 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00883331 \*\*Image available\*\*  
**TRANSMIT DIVERSITY APPARATUS AND METHOD USING TWO OR MORE ANTENNAS**  
**APPAREIL ET PROCEDE D'EMISSION EN DIVERSITE A L'AIDE D'AU MOINS DEUX**  
**ANTENNES**

Patent Applicant/Assignee:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200217512 A1 20020228 (WO 0217512)

Application: WO 2001KR1412 20010821 (PCT/WO KR0101412)

Priority Application: KR 200048722 20000822

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(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

Publication Language: English

Filing Language: English

Fulltext Word Count: 15812

Fulltext Availability:

Detailed Description

Detailed Description

... used to guarantee performance of the UE supporting the existing  
twoantenna transmit diversity technique.

A data signal 'A' to be transmitted in the four-antenna **transmit diversity** system may have a value of 1 or - 1, when it is applied to a BPSK transmitter, and may have a value of  $1+j$ ...

... $1-j$ ,  $jj$ , when it is applied to a QPSK transmitter. The data signal can also be applied to a transmitter supporting such high efficiency **modulation** as 8PSK (8-state Phase Shift Keying) **modulation**, 16QAM (16-ary Quadrature Amplitude **Modulation**) **modulation** and 64QAM (64-ary Quadrature Amplitude **Modulation**) **modulation** in the similar method. It will be assumed herein that the data signal 'A' is applied to an STTD (Space - 21 Time block coding based **Transmit Diversity**) technique which is one of open loop mode techniques among the above-stated **transmit diversity** techniques. The STTD considers a dedicate physical channel (DPCH), a primary common control physical channel (P - CCPCH), a secondary common control physical channel (S CCPCH), a **synchronization channel** (SCH), a page indication channel (PICH), an acquisition indication channel (AICH), and a physical downlink shared

channel (PDSCH), and calculates channel estimation values of the...

...common pilot channel (CPICH). In the case where the data signal 'A' has a format such that symbols S1 and S2 are sequentially received in **transmit diversity** encoding time intervals T1 and T2, respectively, the consecutive symbols S1S2, after being subjected to STTD encoding, are output as S1S2 through the first antenna ...  
...antenna. Specifically describing the symbol STTD encoding in a channel bit unit, if it is assumed that the symbols S1 and S2 received in the **transmit diversity** encoding time intervals T1 and T2 as stated above are created as channel bits b0b1, and b2b3, respectively, then the symbols S1 S2 are received...

?

10/5/1 (Item 1 from file: 349)  
DIALOG(R)File 349:PCT FULLTEXT  
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01090169 \*\*Image available\*\*

REDUCING INTERFERENCE AND CONTROLLING POWER WITH A MULTIPLE FORMAT CHANNEL  
IN A COMMUNICATION SYSTEM

REDUCTION D'INTERFERENCE ET REGULATION DE PUISSANCE A L'AIDE D'UN CANAL A  
FORMATS MULTIPLES DANS UN SYSTEME DE COMMUNICATION

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200412361 A1 20040205 (WO 0412361)

Application: WO 2003US23858 20030729 (PCT/WO US03023858)

Priority Application: US 2002209163 20020729

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PG PH PL  
PT RO RU SC SD SE SG SK SL SY TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM  
ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/005

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 10025

#### English Abstract

Techniques for reducing interference with a multiple format channel in a communication system are disclosed. In one aspect, a minimum power level is determined for each format transmitted during a transmission interval. The minimum power level for formats that will experience the interference are increased to compensate. The power level selected for transmission during the transmission interval is the most stringent of the minimum power levels. Various other aspects are also presented. These aspects have the benefit of mitigating the effects of a known interfering signal, while avoiding unnecessarily increasing transmit power, thus reducing the interference to other users and increasing system capacity.

#### French Abstract

L'invention concerne des techniques destinees a reduire une interference avec une antenne a formats multiples dans un systeme de communication. Dans un de ses aspects, un niveau de puissance minimum est determine pour chaque format transmis au cours d'un intervalle de transmission. Le niveau de puissance minimum destine aux formats que va connaitre l'interference va etre augmente en vue de compenser le niveau de puissance selectionne pour la transmission au cours de l'intervalle de transmission etant le plus rigoureux des niveaux de puissance minimum.

Divers autres aspects de l'invention sont également presentes. Ces aspects presentent l'avantage d'attenuer les effets d'un signal brouilleur connu, tout en evitant une augmentation de la puissance de transmission inutile, reduisant ainsi l'interference pour d'autres utilisateurs et accroissant la capacite du systeme.

Legal Status (Type, Date, Text)

Publication 20040205 A1 With international search report.

Publication 20040205 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

10/5/2 (Item 2 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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01066584 \*\*Image available\*\*

CHANNEL RECONNECTION SYSTEM AND METHOD

CHANNEL RECONNECTION SYSTEM AND METHOD

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200396718 A1 20031120 (WO 0396718)

Application: WO 2003US14801 20030508 (PCT/WO US0314801)

Priority Application: US 2002379375 20020508

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT

RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE

SI SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04Q-007/20

International Patent Class: H04B-007/212 ; H04B-007/216

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 5344

English Abstract

A method and apparatus for reducing call setup latency for a wireless device (120) in a cellular network where the wireless device, stores (124, 126), and analyze base station overhead information to reduce the need to perform initialization after a call session terminated.

French Abstract

A method and apparatus for reducing call setup latency for a wireless device (120) in a cellular network where the wireless device, stores (124, 126), and analyze base station overhead information to reduce the need to perform initialization after a call session terminated.

Legal Status (Type, Date, Text)

Publication 20031120 A1 With international search report.

Examination 20040205 Request for preliminary examination prior to end of  
19th month from priority date

10/5/3 (Item 3 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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01051825 \*\*Image available\*\*

**SOFT HANDOFF FOR OFDM**

**TRANSFERT EN DOUCEUR POUR OFDM**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200381938 A1 20031002 (WO 0381938)

Application: WO 2003IB153 20030122 (PCT/WO IB0300153)

Priority Application: US 2002104399 20020322

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CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO

RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT SE SI  
SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04Q-007/38

International Patent Class: H04L-005/02; H04L-025/02; H04B-007/02

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 13464

English Abstract

The present invention relates to soft handoffs in an OFDM system. Each mobile terminal measures pilot signal strengths of transmissions from adjacent base stations. If the pilot signal strength for a base station exceeds the defined threshold, that base station is added to an active set list. Each mobile terminal notifies the base station controller and the servicing base station, the mobile terminal identifies the sole servicing base station or triggers a soft handoff mode uses a combination of scheduling and space-time coding to affect efficient and reliable handoffs.

French Abstract

La presente invention concerne des procedes de transfert en douceur dans un systeme OFDM. Chaque terminal mobile mesure des intensites du signal de pilote emanant de stations de base adjacentes. Si l'intensite du

signal de pilote pour une station de base depasse le seuil defini, cette station de base est ajoutee a une liste effective etablie. Chaque terminal mobile avise sa station de base de sa liste effective etablie. En fournissant la liste etablie au controleur de la station de base et a la station de base de service, le terminal mobile identifie la seule station de base de service, ou declenche un mode de transfert en douceur lorsque plusieurs stations de base apparaissent sur la liste effective etablie. Le mode de transfert en douceur met en oeuvre une procedure combinee de repartition et de codage spatio-temporel pour effectuer des transferts efficaces et fiables.

Legal Status (Type, Date, Text)

Publication 20031002 A1 With international search report.

10/5/4 (Item 4 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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01049512 \*\*Image available\*\*

**METHOD AND APPARATUS FOR REDUCING INTER-CHANNEL INTERFERENCE IN A WIRELESS COMMUNICATION SYSTEM**

**PROCEDE ET APPAREIL DE REDUCTION D'INTERFERENCE INTERCANAUX DANS UN SYSTEME DE COMMUNICATIONS HERTZIENNES**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200379577 A2 20030925 (WO 0379577)

Application: WO 2003US7950 20030313 (PCT/WO US0307950)

Priority Application: US 2002364442 20020314; US 2002118686 20020408

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO.CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT  
RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE  
SI SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/08

International Patent Class: H04B-007/26

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 15149

English Abstract

Method and apparatus for reducing interference in a wireless communication system when the source of interference is a deterministic component of the system. In one embodiment, the receiver weights the transmitters according to when the source of interference is transmitted.

Further, the transmitter may employ power boosting to overcome the source of interference. In one embodiment, a W-CDMA system transmits a sync channel concurrently with physical channels, wherein the sync channel is not orthogonal to the physical channels. The receiver may cancel the sync channel when receiving control or data information. Similarly, the receiver may weight the transmissions from multiple transmitters.

French Abstract

L'invention concerne un procede et un appareil de reduction d'interference dans un systeme de communications hertziennes lorsque la source d'interference est un composant determinable du systeme. Dans un mode de realisation, le recepteur pondere les emetteurs lorsque la source d'interference est emise. L'emetteur peut, en outre utiliser une pointe de puissance pour maitriser la source d'interference. Dans un autre mode de realisation, un systeme AMRC a large bande emit un canal de synchronisation concurremment avec des canaux physiques, le canal de synchronisation n'etant pas orthogonal aux canaux physiques. Le recepteur peut annuler le canal de synchronisation a reception d'information de commande ou de donnees. De la meme facon, le recepteur peut ponderer les emissions de plusieurs emetteurs.

Legal Status (Type, Date, Text)

Publication 20030925 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20031211 Request for preliminary examination prior to end of 19th month from priority date

10/5/5 (Item 5 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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01049511 \*\*Image available\*\*

**METHOD AND APPARATUS FOR REDUCING INTERFERENCE WITH OUTER LOOP POWER CONTROL IN A WIRELESS COMMUNICATION SYSTEM**  
**PROCEDE ET APPAREIL DE REDUCTION DES INTERFERENCES DANS UN SYSTEME DE COMMUNICATIONS SANS FIL**

Patent Applicant/Assignee:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200379576 A2-A3 20030925 (WO 0379576)

Application: WO 2003US7952 20030313 (PCT/WO US0307952)

Priority Application: US 2002364442 20020314; US 2002118691 20020408

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NI NO NZ OM PH PL PT RO RU SC SD SE SG SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW (EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LU MC NL PT RO SE SI SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM  
Main International Patent Class: H04B-007/005  
International Patent Class: H04L-001/00; H04J-013/00; H04B-001/707  
Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 16099

#### English Abstract

Method and apparatus for reducing interference in a wireless communication system when the source of interference is a deterministic component of the system. The method comprises the steps of receiving transmissions on a plurality of channels, each associated with a block error rate; selecting a channel for application to outer loop power control based on the error rates; and performing outer loop power control based on the selected channel, which is the dedicated control channel. The method can be applied in W-CDMA systems.

#### French Abstract

Procédé et appareil de réduction des interférences dans un système de communications sans fil lorsque la source d'interférences est un constituant déterministe du système. Dans un mode de réalisation, le récepteur pondère les émetteurs selon le moment auquel la source d'interférence est transmise. Ensuite, l'émetteur peut utiliser une amplification de puissance pour éliminer la source d'interférence. Dans un mode de réalisation, un système W-CDMA transmet sur un canal sync, simultanément à des canaux physiques, le canal sync étant non orthogonal par rapport aux canaux physiques. Le récepteur peut annuler le canal sync lors de la réception d'informations de commande ou de données. De même, le récepteur peut pondérer les transmissions à partir d'émetteurs multiples.

#### Legal Status (Type, Date, Text)

Publication 20030925 A2 Without international search report and to be republished upon receipt of that report.  
Search Rpt 20031224 Late publication of international search report  
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Republication 20031224 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.  
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01033339 \*\*Image available\*\*

**MULTIPATH, MULTIUSER INTERFERENCE PROCESSING SYSTEMS IN A CDMA RECEIVER**  
**SYSTEMES MULTIVOIES, MULTIUTILISATEURS, DE TRAITEMENT D'INTERFERENCES DANS**  
**UN RECEPTEUR CDMA**

Patent Applicant/Assignee:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200363374 A1 20030731 (WO 0363374)

Application: WO 2003JP671 20030124 (PCT/WO JP0300671)

Priority Application: GB 20021729 20020125

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Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 31018

English Abstract

Spread spectrum receiver architectures and methods are described for reducing interference, particularly the interference observed at a user-end terminal in a W-CDMA 3G mobile communications system. Interpath interference which arises due to non-zero cross and auto correlation of more than one spreading code is suppressed by estimating a transmitted signal stream, or a plurality of such signal streams in the case of a plurality of multipath components, resspreading this estimated signal and subtracting non-orthogonal interference contributions from a received signal. The techniques provide an improved bit error rate or equivalently, enhanced capacity for a digital mobile communications network.

French Abstract

L'invention concerne des architectures de recepteurs a spectre etale et des procedes de reduction d'interferences, en particulier des interferences observees au niveau d'un terminal d'utilisateur final, dans un systeme de communications mobiles W-CDMA de troisieme generation. L'interference inter-voie, qui survient du fait d'un non passage par zero et d'une correlation automatique de plus d'un code d'etalement, est supprimee par estimation d'un flux de signaux transmis, ou d'une pluralite de tels flux de signaux dans le cas ou plusieurs composantes multivoies sont mises en oeuvre; par reetalement dudit signal estime et soustraction de contributions d'interference non orthogonales provenant d'un signal recu. Ces techniques fournissent des taux d'erreur sur les bits ameliorees ou, ce qui revient au meme, une capacite amelioree pour un reseau de communications mobiles numeriques.

Legal Status (Type, Date, Text)

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01022878      \*\*Image available\*\*

METHOD AND APPARATUS FOR TWO-USER JOINT DEMODULATION IN A SYSTEM HAVING  
TRANSMIT DIVERSITY

PROCEDE ET APPAREIL DE DEMODULATION CONJOINTE DE DEUX USAGERS DANS UN  
SYSTEME PRESENTANT UNE DIVERSITE D'EMISSION

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200352957 A1 20030626 (WO 0352957)

Application: WO 2002US39754 20021212 (PCT/WO US0239754)

Priority Application: US 200117103 20011214

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SI SK  
TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

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Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 7787

English Abstract

Method and apparatus for two-user join demodulation in a system having  
**transmit diversity**. A receiver includes at least a detector unit  
(1513) and a channel estimation unit (1512), and exploits **transmit  
diversity** employed by at least one of two users or transmitters on a  
channel. Symbol detection (301, 401, 601, 701, 901, 1101, 1301) and  
channel estimation (303, 403, 603) are performed in block or batch  
fashion, or recursively on a symbol-by-symbol basis. Joint detection  
makes use of **transmit diversity** by at least one of the transmitting  
users. Channel estimates can be updated using channel tracking (904,  
1304). If the signals from the first user and the second user are  
asynchronous, detection can be accomplished in part through reference to  
a pulse-shape component. The receiver may be incorporated into a mobile  
communication terminal.

French Abstract

L'invention concerne un procede et un appareil pour demoduler  
conjointement deux usagers dans un systeme presentant une diversite  
d'emission. Un recepteur comprend au moins une unite de detection (1513)  
et une unite d'estimation de canal (1512) et il exploite une diversite  
d'emission utilisee par au moins un de deux utilisateurs ou emetteurs

sur un canal. La detection de symboles (301, 401, 601, 701, 901, 1101, 1301) et l'estimation de canal (303, 403, 603) sont realisees en bloc ou en lot, ou bien de maniere recurrente sur une base symbole-par-symbole. Une detection jointe utilise la diversite d'emission par au moins un des utilisateurs emetteurs. Les estimations de canaux peuvent etre actualisees au moyen d'un suivi de canal (904, 1304). Si les signaux provenant du premier et du deuxieme utilisateur sont asynchrones, la detection peut etre en partie realisee par reference a un composant de forme d'impulsion. Le recepteur peut etre incorpore dans un terminal de communication mobile.

Legal Status (Type, Date, Text)

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01015023 \*\*Image available\*\*

CONSTRUCTION OF AN INTERFERENCE MATRIX FOR A CODED SIGNAL PROCESSING ENGINE  
CONSTRUCTION D'UNE MATRICE D'INTERFERENCE POUR UN MOTEUR DE TRAITEMENT DES  
SIGNAUX CODES

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200344969 A2 20030530 (WO 0344969)

Application: WO 2002US36817 20021115 (PCT/WO US0236817)

Priority Application: US 2001331480 20011116

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 24850

English Abstract

A method and apparatus for cancelling signal interference are presented.  
Transmitted signal (501) is received by antenna (502) and frequency  
downconverted and sampled in ADC box (504). Control/logic module 506,

Provides appropriate information to assignment fingers 508, 510 and 512 and data flow to and from fingers 508, 510 and 512. Each finger includes a coded Signal **modulation** processor (520) to perform projection operation to remove interference and a demodulator (522) to demodulate the signal of interest.

French Abstract

L'invention concerne un procede et un appareil permettant d'annuler l'interference de signaux. Les signaux transmis (501) sont recus par une antenne (502), baisses en frequence et echantillonnes dans une boite de conversion analogique-numerique (504). Un module de controle/logique (506) fournit des informations appropriees a des Fingers (508, 510 et 512) ainsi que des flux de donnees vers et a partir des Fingers (508, 510 et 512). Chaque Finger comprend un processeur de **modulation** de signaux codes (520) destine a effectuer une operation de projection afin de supprimer les interferences et un demodulateur (522) destine a demoduler les signaux d'interet.

Legal Status (Type, Date, Text)

Publication 20030530 A2 Without international search report and to be republished upon receipt of that report.

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01013268 \*\*Image available\*\*

**SIGNAL MEASUREMENT APPARATUS AND METHOD FOR HANDOVER IN A MOBILE COMMUNICATION SYSTEM**

**APPAREIL DE MESURE DE SIGNAUX ET PROCEDE DE TRANSFERT DANS UN SYSTEME DE COMMUNICATION MOBILE**

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 Patent and Priority Information (Country, Number, Date):  
 Patent: WO 200343237 A1 20030522 (WO 0343237)  
 Application: WO 2002KR2149 20021118 (PCT/WO KR0202149)  
 Priority Application: KR 200171655 20011117; KR 200177974 20011210; KR  
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 Main International Patent Class: H04B-017/00  
 Publication Language: English  
 Filing Language: English  
 Fulltext Availability:  
 Detailed Description  
 Claims  
 Fulltext Word Count: 28034

#### English Abstract

An RNC determines parameters available for measurement of a  
 .synchronization signal and second Node B information from a second Node  
 B, transmits the determined parameters to a first Node B during radio  
 link setup and to a UE during radio bearer setup, and transmits parameter  
 selection information to the first Node B and the UE. The first Node B  
 changes a position of a downlink time period over which a downlink  
 channel is transmitted from the first Node B to the UE and a position of  
 an uplink time period over which an uplink channel is transmitted from  
 the UE to the first Node B. The UE receives the synchronization signal  
 and the second Node B information in the remaining time periods except  
 the changed downlink time period and the changed uplink time period among  
 the plurality of time periods.

#### French Abstract

Un RNC determine les parametres disponibles pour la mesure d'un signal de  
 synchronisation et les informations du noeud B provenant du noeud B,  
 transmet les parametres determines a un premier noeud B pendant la  
 configuration d'une liaison radio et a un UE (equipement utilisateur)  
 pendant la configuration d'un support radio, et transmet les informations  
 de selection des parametres au premier noeud B et l'UE. Le premier noeud  
 B change une position d'une periode de liaison descendante pendant  
 laquelle un canal de liaison descendante est transmis depuis le premier  
 noeud B a l'UE et une position d'une periode de liaison ascendante  
 pendant laquelle un canal de liaison ascendante est transmis depuis l'UE  
 au premier noeud B. L'UE recoit le signal de synchronisation et les  
 informations du deuxieme noeud B dans les periodes restantes, a  
 l'exception de la periode modifiee de liaison descendante et la periode  
 modifiee de liaison ascendante faisant partie de plusieurs periodes.

#### Legal Status (Type, Date, Text)

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01011196 \*\*Image available\*\*

**HARDWARE STRUCTURE AND METHOD FOR A TRANSCEIVER DEVICE WITH CONFIGURABLE CO-PROCESSORS FOR MOBILE RADIO APPLICATIONS**  
**STRUCTURE MATERIEL DESTINEE A UN DISPOSITIF EMETTEUR-RECEPTEUR EN VUE D'APPLICATIONS EN RADIOTELEPHONIE MOBILE, ET PROCEDE DE TRAITEMENT DE DONNEES DANS UN TEL DISPOSITIF EMETTEUR-RECEPTEUR**  
**HARDWARE-STRUKTUR UND VERFAHREN FUR EINE SENDE-EMPFANGS-EINRICHTUNG MIT KONFIGURIERBAREN COPROZESSOREN FUR MOBILFUNKANWENDUNGEN**

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Patent Applicant/Inventor:

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Munchen, DE,

Patent and Priority Information (Country, Number, Date):

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Application: WO 2002DE3657 20020926 (PCT/WO DE0203657)

Priority Application: DE 10153767 20011031

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(EP) DE DK FI FR GB IT SE

Main International Patent Class: **H04B-001/40**

International Patent Class: **H04B-001/707**

Publication Language: German

Filing Language: German

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 4934

English Abstract

The invention concerns a transceiver device for use in mobile radio telephony comprising a microprocessor (DSP), at least a task-specific processor (P1, P2, P3) and an interface processor (2). The task-specific processor (P1, P2, P3) can be configured, by transmitting appropriate configuration instructions, from the microprocessor, via the interface processor (2), so as to enable control of a basic function executed by the task-specific processor (P1, P2, P3), through configuration parameter modifications.

French Abstract

Un dispositif emetteur-recepteur destine a des applications en radiotelephonie mobile comprend un microprocesseur (DSP), au moins un processeur specifique des taches (P1, P2, P3) et une interface processeur (2). Le processeur specifique des taches (P1, P2, P3) peut etre configure, par transmission d'instructions de configuration appropriees, a partir du microprocesseur, via l'interface processeur (2), de maniere a rendre possible une commande d'une fonction de base executee par le processeur specifique des taches (P1, P2, P3), par modifications des parametres de configuration.

German Abstract

Eine Sende-Empfangs-Einrichtung für Mobilfunkanwendungen weist einen Mikroprozessor (DSP), mindestens einen aufgabenspezifischen Prozessor (P1, P2, P3) und ein Prozessor-Interface (2) auf. Der aufgabenspezifische Prozessor (P1, P2, P3) ist durch Übermittlung geeigneter Konfigurationsbefehle vom Mikroprozessor über das Prozessor-Interface (2) konfigurierbar, derart, dass eine Steuerung einer von dem aufgabenspezifischen Prozessor (P1, P2, P3) ausgeführten Grundfunktion durch Ändern von Konfigurations-Parametern möglich ist.

Legal Status (Type, Date, Text)

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01004619 \*\*Image available\*\*

SYNCHRONISATION IN MULTICARRIER CDMA SYSTEMS

ACCES SYSTEME ET PROCEDES DE SYNCHRONISATION POUR SYSTEMES DE COMMUNICATION  
MIMO OFDM, PAQUET DE COUCHE PHYSIQUE ET CONFIGURATION DE TYPE PREAMBULE

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200334642 A2-A3 20030424 (WO 0334642)  
Application: WO 2002CA1542 20021015 (PCT/WO CA2002001542)  
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2001329510 20011017; US 200238915 20020108

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04L-001/06

International Patent Class: H04L-005/02; H04L-027/26; H04B-007/06 ;  
H04Q-007/38

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 13298

#### English Abstract

A method and apparatus are provided for performing acquisition, synchronization and cell selection within an MIMO-OFDM communication system. A coarse synchronization is performed to determine a searching window. A fine synchronization is then performed by measuring correlations between subsets of signal samples, whose first signal sample lies within the searching window, and known values. The correlations are performed in the frequency domain of the received signal. In a multiple-output OFDM system, each antenna of the OFDM transmitter has a unique known value. The known value is transmitted as pairs of consecutive pilot symbols, each pair of pilot symbols being transmitted at the same subset of sub-carrier frequencies within the OFDM frame.

#### French Abstract

L'invention concerne un procede et un appareil permettant d'effectuer une acquisition, une synchronisation et une selection de cellule a l'interieur d'un systeme de communication MIMO-OFDM. On effectue une synchronisation grossiere pour determiner une fenetre de recherche. On effectue ensuite une synchronisation fine en mesurant les correlations entre des sous-ensembles d'echantillons de signaux, dont le premier echantillon de signal se trouve a l'interieur de la fenetre de recherche, et des valeurs connues. Les correlations sont effectuees dans le domaine frequentiel du signal recu. Dans un systeme OFDM a sorties multiples, chaque antenne de l'emetteur OFDM possede une valeur connue unique. Cette valeur connue est transmise sous forme de paires de symboles pilotes consecutifs, chaque paire de symboles pilotes etant transmise avec le meme sous-ensemble de frequences sous-porteuses a l'interieur de la trame OFDM.

#### Legal Status (Type, Date, Text)

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Search Rpt 20040115 Late publication of international search report  
Republication 20040115 A3 With international search report.  
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DIALOG(R)File 349:PCT FULLTEXT

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01000351 \*\*Image available\*\*

METHOD AND APPARATUS FOR ACQUIRING PILOTS OVER CODE SPACE AND FREQUENCY ERRORS IN A CDMA COMMUNICATION SYSTEM

PROCEDE ET APPAREIL PERMETTANT L'ACQUISITION DE PILOTES SUR ESPACE DE CODES ET DES ERREURS DE FREQUENCE DANS UN SYSTEME DE COMMUNICATION AMRC

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200330391 A2-A3 20030410 (WO 0330391)  
Application: WO 2002US31776 20021002 (PCT/WO US0231776)  
Priority Application: US 2001971903 20011004  
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM  
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Publication Language: English  
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Claims  
Fulltext Word Count: 12486

#### English Abstract

Techniques to acquire pilots over code space and/or frequency errors. In one aspect, pilot acquisition is performed using a number of substages, and some of the substages are pipelined and performed in parallel using different processing elements. A searcher initially searches over a designated code space to find peaks, and these peaks may be re-evaluated. Finger processors then attempt to acquire the candidate peaks. The searcher may be operated to search for the next set of peaks while the finger processors process the current set of peaks. In another aspect, the full range of frequency errors for the pilots is divided into a number of frequency bins. A multi-stage scheme is used to evaluate the bins, and may employ pipelining and parallel processing such that a search for peaks in the next bin is performed while acquisition of peaks found for the current bin is attempted.

#### French Abstract

La presente invention concerne des techniques permettant l'acquisition de pilotes sur espace de codes et/ou des erreurs de frequence. Dans un premier aspect, l'acquisition de pilotes s'effectue au moyen d'un certain nombre de sous-etages, et certains des sous-etages sont executes en simultane et traites en parallele au moyen de divers elements de traitement. Au depart, un organe de recherche effectue une recherche sur un espace de code designe pour retrouver des pics, et ces cretes peuvent etre revaluees. Des processeurs digitaux essaient ensuite d'acquiesir les cretes candidates. L'organe de recherche peut etre opere pour le prochain ensemble de cretes tandis que les processeurs digitaux effectuent le traitement de l'ensemble courant de cretes. Dans un autre aspect, la plage complete d'erreurs de frequence pour les pilotes est divisee en un certain nombre de fichiers de frequences, et peuvent utiliser l'execution simultanee et le traitement en parallele de sorte qu'une recherche de cretes dans le prochain fichier est effectuee durant la tentative d'acquisition des cretes retrouvees pour le fichier en cours.

#### Legal Status (Type, Date, Text)

Publication 20030410 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20030717 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20030828 Late publication of international search report  
Republication 20030828 A3 With international search report.

10/5/13 (Item 13 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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01000350 \*\*Image available\*\*

**PILOTS SEARCH IN CDMA SYSTEMS**

**RECHERCHE DE PILOTES DANS DES SYSTEMES AMCR**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200330390 A1 20030410 (WO 0330390)

Application: WO 2002US31773 20021002 (PCT/WO US0231773)

Priority Application: US 2001327498 20011004; US 20012063 20011025

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG UZ VC VN YU ZA ZM ZW  
(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-001/707

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 9727

**English Abstract**

Techniques to search for pilots over code space in a CDMA system where two substages are used to search for pilots. The detect substage searches through (e.g., fixed-size) search windows to detect for peaks in the received signal. The "dwell substage" then searches through (e.g., variable-size) search windows to re-evaluate the detected peaks and remove noise peaks. The dwell windows may be formed using a combination of overlapping search windows, such that a code space as small as possible is searched (to reduce search time) but large enough to account for possible drift in the detected peaks. Variable number of peaks may be provided by the dwell substage for the variable-size dwell windows.

**French Abstract**

L'invention concerne des techniques de recherche de pilotes dans un espace de codes d'un systeme AMCR ou deux sous-etages sont utilises pour rechercher des pilotes. Le sous-etage de detection effectue la recherche a travers des fenetres de recherche ( p. ex. de taille fixe) afin de detecter des pointes dans le signal recu. Le "sous-etage d'attente" effectue la recherche a travers des fenetres de recherche ( p. ex. de taille variable) afin de reevaluer les pointes detectees et d'eliminer des pointes de bruit. Les fenetres d'attente peuvent etre formees par une combinaison de fenetres de recherche superposees, tel qu'un espace de code aussi petit que possible soit explore (afin de diminuer le temps de recherche) mais suffisamment grand pour prendre en compte une derive

possible dans les pointes detectees. Un nombre variable de pointes peut  
etre fourni par le sous-etage d'attente pour les fenetres d'attente de  
taille variable.

Legal Status (Type, Date, Text)

Publication 20030410 A1 With international search report.

Examination 20030724 Request for preliminary examination prior to end of  
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10/5/14 (Item 14 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

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00996114 \*\*Image available\*\*

DIGITAL COMMUNICATION METHOD AND SYSTEM

PROCEDE ET SYSTEME DE COMMUNICATION NUMERIQUE

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200326159 A1 20030327 (WO 0326159)

Application: WO 2002KR1774 20020918 (PCT/WO KR0201774)

Priority Application: KR 200157421 20010918

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO

RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW

(EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-001/713

Publication Language: English

Filing Language: Korean

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 34438

English Abstract

A transmission control method and apparatus in a collision interval during a collision of multidimensional hopping patterns. The present invention hopping-selects an orthogonal wireless resource in the area of the multidimensional orthogonal resource according to communication standards negotiated between a transmitter and a receiver, a corresponding channel being distinguished by the hopping pattern. The present invention allocates a specific multidimensional hopping pattern by the second stations. The hopping pattern is permanently allocated to the second stations or from the first station during a call set up. The permanent allocation of the hopping pattern to the second stations is achieved when the hopping pattern is identified based on a unique identifier. Such as ESN of the second station. The hopping patterns of the second stations are mutually independent so that the coordinates of the same orthogonal resource is allocated to different second stations in a simultaneous manner in a predefined moment.

French Abstract

La presente invention concerne un procede et un appareil de commande d'emission dans un intervalle de collision pendant une collision de configurations de saut multidimensionnels. La presente invention selectionne par saut une ressource sans fil orthogonale dans le domaine de la ressource orthogonale multidimensionnelle conformement a des normes de communication negociees entre un emetteur et un recepteur, un canal correspondant etant distingue par la configuration de saut. Cette invention permet d'attribuer une configuration de saut multidimensionnelle specifique via les deuxiemes stations. Cette configuration de saut est attribuee de facon permanente aux deuxiemes stations ou a partir de la premiere station pendant une exploitation d'appel. Cette attribution permanente de configuration de saut aux deuxiemes stations est realisee lorsque cette configuration de saut est identifiee a partir d'un identificateur unique, tel que l'ESN de la deuxieme station. Les configurations de saut des deuxiemes stations sont interdependantes de sorte que les coordonnees de la meme ressource

orthogonale sont attribuees simultanement a differentes deuxiemes stations a un moment predefini.

Legal Status (Type, Date, Text)

Publication 20030327 A1 With international search report.

Publication 20030327 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

Examination 20030612 Request for preliminary examination prior to end of 19th month from priority date

10/5/15 (Item 15 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00981021 \*\*Image available\*\*

**METHOD OF AND APPARATUS FOR COMMUNICATION VIA MULTIPLEXED LINKS**

**PROCEDE ET SYSTEME DE COMMUNICATION UTILISANT DES LIGNES MULTIPLEXEES**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200310901 A1 20030206 (WO 0310901)

Application: WO 2002CA1119 20020717 (PCT/WO CA0201119)

Priority Application: CA 2354196 20010726

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW (EP) AT BE BG CH CY CZ DE DK EE ES FI FR GB GR IE IT LU MC NL PT SE SK TR (OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG (AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW (EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/26

International Patent Class: H04J-013/02; H04L-005/02; H04L-027/26

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 4949

English Abstract

A communication structure and method which allows connection-like and connectionless communications to be provided on a multiplexed link is provided. The structure and method can make efficient use of available transmission capacity and/or network resources while providing both types of communication and hybrids. Connection-like communications can be provided by a dedicated code division multiplexed channels having allocated transmission capacity dedicated to the communication while connectionless communication can be provided by a shared orthogonal

frequency division multiplexed channel through which data can be transmitted to subscribers. In an embodiment, the shared channel transmits inverse fast fourier transformed frequency sub-bands allocated to one or more of the subscribers. The allocation of the sub-bands can be fixed, or dynamically quantized or proportional.

French Abstract

L'invention concerne une structure et un procede de communication qui permettent d'etablir des communications avec connexion ou sans connexion sur une ligne multiplexee. La structure et le procede de l'invention peuvent mettre en oeuvre efficacement une capacite de transmission disponible et/ou des ressources de reseau tout en fournissant les deux types de communication ou des communications mixtes. Des communications avec connexion peuvent etre etablies par une voie specialisee multiplexee par difference de code ayant une capacite de transmission reservee a la communication, tandis qu'une communication sans connexion peut etre etablie par une voie orthogonale partagee multiplexee en frequence par laquelle des donnees sont transmises a des abonnes. Dans une forme de realisation, la voie partagee transmet des sous-bandes de frequences obtenues par transformation de Fourier rapide inverse attribuees a un ou plusieurs abonnes. L'attribution des sous-bandes peut etre fixe, ou quantifiee de facon dynamique, ou proportionnelle.

Legal Status (Type, Date, Text)

Publication 20030206 A1 With international search report.

10/5/16 (Item 16 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00961812 \*\*Image available\*\*

SYSTEMS AND METHODS FOR SELECTING A CELL IN A COMMUNICATIONS NETWORK  
SYSTEMES ET PROCEDES DE SELECTION DE CELLULE DANS UN RESEAU DE  
COMMUNICATION

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200295973 A1 20021128 (WO 0295973)

Application: WO 2002US13931 20020503 (PCT/WO US0213931)

Priority Application: US 2001859535 20010518

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ OM PH PL PT RO  
RU SD SE SG SI SK SL TJ TM TN TR TT TZ UA UG US UZ VN YU ZA ZM ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZM ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-001/707

International Patent Class: H04B-007/26 ; H04B-007/06 ; H04L-027/227

Publication Language: English

Filing Language: English

Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 5720

#### English Abstract

A system (140) searches for a cell and determines a frequency error estimate in a communication network (100). The system (140) generates a slot boundary candidate. The system (140) identifies a scrambling code group using the slot boundary list, identifies a scrambling code from the scrambling code group, and determines a frequency error estimate using the identified scrambling code. The system (140) also determines a detection metric, compares the detection metric to a predetermined threshold, and selects the frequency error estimate when the detection metric is greater than the predetermined threshold.

#### French Abstract

L'invention concerne un systeme (140) qui recherche une cellule et calcule une estimation d'erreur de frequence dans un reseau (100) de communication. Ce systeme (140) cree une delimitation candidate d'un intervalle temporel. Le systeme (140) identifie un groupe de codes de chiffrement au moyen de la liste des limites d'intervalles temporels, identifie un code de chiffrement dans ce groupe de codes de chiffrement et determine une estimation d'erreur de frequence a partir du code de chiffrement identifie. Le systeme (140) determine en outre une metrique de detection et compare cette metrique de detection avec un seuil predetermine, puis selectionne l'estimation d'erreur de frequence lorsque la metrique de detection est superieure au seuil predetermine.

#### Legal Status (Type, Date, Text)

Publication 20021128 A1 With international search report.  
Examination 20030417 Request for preliminary examination prior to end of 19th month from priority date

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DIALOG(R) File 349:PCT FULLTEXT  
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00946160 \*\*Image available\*\*  
COMBINED SELECTIVE TIME SWITCHING TRANSMISSION DIVERSITY (STSTD) METHOD AND SYSTEM  
PROCEDE ET SYSTEME D'EMISSION EN DIVERSITE A COMMUTATION TEMPORELLE SELECTIVE (STSTD) COMBINEE

#### Patent Applicant/Assignee:

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#### Patent and Priority Information (Country, Number, Date):

Patent: WO 200280380 A1 20021010 (WO 0280380)  
Application: WO 2001US10283 20010330 (PCT/WO US0110283)  
Priority Application: WO 2001US10283 20010330

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG

SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-001/02

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 4257

#### English Abstract

A common channel transmitter (112) at the base station (102) produces a first carrier signal to sequentially communicate, via diverse transmission antennas, a pilot reference signal (111) to mobile stations (140). A dedicated channel transmitter produces a second carrier that communicates voice and signal traffic to the mobile station (140). At the base station (102) a sequencing switch (120) sequentially couples the common transmitter (112) to each of the transmission antennas (118, 128, 138) for sequentially transmitting the first carrier modulated with a pilot reference signal. A plurality of diverse receiving antennas (150, 160, 170), each corresponding to a respective one of the transmitter antennas (118, 128, 138), receive signals from the mobile station (140). The base station receiver provides respective signal to noise estimations indicating one of the antennas has a signal to noise ratio that is better than the signal to noise value provide by any other antenna. The base station (102) uses this antenna for the dedicated channel that is transmitted to the mobile station (140).

#### French Abstract

Un emetteur (112) de canal commun au niveau d'une station de base (102) produit un premier signal de porteuse afin de communiquer sequentiellement un signal de reference (111) pilote a des stations mobiles (140) via diverses antennes d'emission. Un emetteur de canal dedie produit une seconde porteuse communiquant un trafic de signaux et de voix a ladite station mobile station (140). Au niveau de la station de base (102), un commutateur de sequencement (120) couple sequentiellement l'emetteur commun (112) a chaque antenne d'emission (118, 128, 138) afin d'emettre sequenciellement le premier signal de porteuse module a l'aide d'un signal de reference pilote. Une pluralite de diverses antennes de reception (150, 160, 170), chacune correspondant a une antenne d'emission (118, 128, 138) correspondante, recoivent des signaux de la station mobile (140). Le recepteur de la station de base fournit un signal respectif a des estimations de bruit indiquant que l'une des antennes presente un rapport signal/bruit meilleur que la valeur signal/bruit fournie par une quelconque autre antenne. La station base (102) utilise cette antenne pour le canal dedie qui est transmis a la station mobile (140).

#### Legal Status (Type, Date, Text)

Publication 20021010 A1 With international search report.

Examination 20030206 Request for preliminary examination prior to end of 19th month from priority date

10/5/18 (Item 18 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00911105      \*\*Image available\*\*

**RECEIVER ARCHITECTURE FOR TRANSMIT DIVERSITY IN CDMA SYSTEM**  
**ARCHITECTURE DE RECEPTEUR POUR UNE DIVERSITE D'EMISSION DANS UN SYSTEME**  
**AMRC**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200245294 A1 20020606 (WO 0245294)

Application: WO 2001US31476 20011010 (PCT/WO US0131476)

Priority Application: US 2000725632 20001129

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CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU

SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/06

International Patent Class: H04L-001/06; H04B-001/707 ; H04B-007/08

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 7028

**English Abstract**

A **transmit diversity** scheme for a CDMA system uses space-time codes to obtain diversity gain. Combined diversity signals encoded according to a space-time code are received at the mobile terminal during first and second symbol periods. The mobile terminal includes a first Rake receiver matched to a first transmit antenna and a second Rake receiver matched to a second transmit antenna. The first Rake receiver combines multipath echoes of the first combined signal during the first symbol period to obtain a first value and combines the multipath echoes corresponding to the second combined signal during the second symbol period to obtain a second value. The second Rake receiver combines multipath echoes corresponding to the first combined signal to obtain a third value and combines multipath echoes corresponding to the second combined signal to obtain a fourth value. A decoder decodes the first, second, third, and fourth values to obtain final estimates of the transmitted symbols.

**French Abstract**

L'invention concerne un schema de diversite d'emission pour un systeme AMRC, qui utilise des codes spatio-temporels pour obtenir un gain de diversite. Des signaux de diversite combines codes en fonction d'un code spatio-temporel sont recus au terminal mobile au cours d'une premiere et d'une seconde periode de symbole. Le terminal mobile comprend un premier recepteur Rake associe a une premiere antenne d'emission et un second recepteur Rake associe a une seconde antenne d'emission. Le premier recepteur Rake combine des echos multivoies du premier signal combine au cours de la premiere periode de symbole pour obtenir une premiere valeur,

et combine les echos multivoies correspondant au second signal combine au cours de la seconde periode de symbole pour obtenir une deuxieme valeur. Le second recepteur Rake combine des echos multivoies correspondant au premier signal combine pour obtenir une troisieme valeur et combine les echos multivoies correspondant au second signal combine pour obtenir une quatrieme valeur. Un decodeur decode les premiere, deuxieme, troisieme et quatrieme valeurs pour obtenir des estimations finales des symboles emis.

Legal Status (Type, Date, Text)

Publication 20020606 A1 With international search report.

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DIALOG(R) File 349:PCT FULLTEXT

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00905503 \*\*Image available\*\*

**FAST FORWARD LINK POWER CONTROL FOR CDMA SYSTEM WITH DIVERSITY TRANSMISSION**

**COMMANDE DE PUISSANCE RAPIDE POUR LIAISON AVAL DANS UN SYSTEME AMCR**

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200239618 A2-A3 20020516 (WO 0239618)

Application: WO 2001US31369 20011009 (PCT/WO US0131369)

Priority Application: US 2000711219 20001109

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CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU

SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/005

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 6934

English Abstract

A method of forward link power control in a CDMA mobile communication system (10) is adapted for diversity transmission. First and second

diversity signals are transmitted from a base station (12) to a mobile terminal (100). The mobile terminal derives first and second channel quality estimates associated with the first and second diversity signals respectively. The mobile terminal uses the channel quality estimates to derive first and second power control codes which it transmits to said base station. The base station adjusts the transmit power of first and second antennas (12A, 12B) associated with the base station based on the first and second power control codes, respectively.

#### French Abstract

Cette invention concerne un procede de commande de puissance pour liaison aval dans un systeme AMCR de communication mobile, qui est prevu pour une transmission de diversite . Des premiers et seconds signaux de diversite sont transmis depuis une station de base vers un terminal mobile. Ce terminal mobile procede a des estimations de qualite pour un premier et un second canal en rapport avec les premiers et les seconds signaux de diversite respectivement. Le terminal mobile exploite ces estimations de qualite de canal pour etablir un premier et un second code de puissance qu'il transmet a la station de base. La station de base regle la puissance de transmission des premiere et seconde antennes associees a ladite station en fonction des premier et second codes de puissance, respectivement.

#### Legal Status (Type, Date, Text)

Publication 20020516 A2 Without international search report and to be republished upon receipt of that report.  
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Republication 20020725 A3 With international search report.

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DIALOG(R)File 349:PCT FULLTEXT

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00895810 \*\*Image available\*\*

**TSTD APPARATUS AND METHOD FOR A TDD CDMA MOBILE COMMUNICATION SYSTEM**  
**APPAREIL A FONCTION DE DIVERSITE DE TRANSMISSION A COMMUTATION**  
**TEMPORELLE ET PROCEDE POUR SYSTEME DE COMMUNICATIONS AMCR A DUPLEX A**  
**REPARTITION DANS LE TEMPS**

#### Patent Applicant/Assignee:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200229990 A1 20020411 (WO 0229990)  
Application: WO 2001KR1669 20011005 (PCT/WO KR0101669)  
Priority Application: KR 200059389 20001005; KR 200067558 20001109  
Designated States: AU CA CN JP  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
Main International Patent Class: H04B-001/56  
Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 12831

#### English Abstract

Disclosed a transmission apparatus in a CDMA mobile communication system. Transmission frames each have a plurality of time slots, and each of the time slots includes two data parts having the same length, a midamble intervening between the data parts, and a guard period for dividing the consecutive time slots. The transmission apparatus **modulates** the frames into a radio signal with a **modulation** signal and transmits the **modulated** radio signal using a plurality of antennas. A power amplifier amplifies the radio signal. A controller generates a switching control signal in a guard period of time slots of a frame associated with the radio signal amplified by the power amplifier. A switch switches the amplified radio signal from the power amplifier between a first and a second antenna in response to the switching control signal.

#### French Abstract

L'invention concerne un systeme de transmission d'un systeme de communications mobile AMCR. Chaque trame de transmission comprend une pluralite de fentes temporelles, et chaque fente temporelle comprend deux parties de donnees de meme longueur, une trame separatrice situee entre lesdites parties de donnees, et une periode de garde permettant de diviser les fentes temporelles consecutives. L'appareil de transmission module les trames dans un signal radio a l'aide d'un signal de **modulation**, et emet le signal radio module a l'aide d'une pluralite d'antennes. Un amplificateur de puissance amplifie ledit signal radio. Une unite de commande genere un signal de commande de commutation dans une periode de garde de fentes temporelles d'une trame associee au signal radio amplifie au moyen de l'amplificateur de puissance. Un commutateur commute le signal radio amplifie a partir de l'amplificateur de puissance entre une premiere et une seconde antennes en reponse au signal de commande de commutation.

#### Legal Status (Type, Date, Text)

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00893793 \*\*Image available\*\*

DOWNLINK TRANSMISSION IN A WIRELESS DATA COMMUNICATION SYSTEM HAVING A BASE STATION WITH A SMART ANTENNA SYSTEM

TRANSMISSION DESCENDANTE DANS UN SYSTEME DE TRANSMISSION DE DONNEES SANS  
FIL COMPORTANT UNE STATION DE BASE EQUIPEE D'UN SYSTEME D'ANTENNES  
INTELLIGENTES

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200227972 A2-A3 20020404 (WO 0227972)

Application: WO 2001US30174 20010926 (PCT/WO US0130174)

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CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PH PL PT RO RU

SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/06

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 20076

English Abstract

A method, device, and machine readable medium to communicate from a base station having a smart antenna system to a user terminal. The method includes providing a downlink channel for transmitting downlink data from the base station to the user terminal, providing an associated channel for the base station to receive an uplink response signal from the user terminal in response to the downlink data. The associated channel is associated, and has a predefined relationship, with the downlink channel. The method further includes providing an uplink data channel, distinct from the associated uplink channel, for the base station to receive uplink data from the user terminal. The method also includes receiving the uplink response signal at the base station, determining a downlink smart antenna processing strategy using the received uplink response signal, sending downlink data from the base station to the user terminal using the determined downlink smart antenna processing strategy, and receiving uplink data from the user terminal on the uplink data channel.

French Abstract

Procede, dispositif et support lisible par machine utiles pour mettre en oeuvre des transmissions a partir d'une station de base equipee d'un systeme d'antennes intelligentes vers un terminal d'utilisateur. Le procede comporte les etapes consistant a : prevoir un canal de voie descendante pour transmettre des donnees descendantes de la station de base vers le terminal d'utilisateur ; prevoir un canal associe permettant a la station de base de recevoir un signal de reponse de voie montante provenant du terminal d'utilisateur, en reponse aux donnees descendantes. Le canal associe est associe au canal de voie descendante et a des relations predefinies avec celui-ci. Le procede comporte en outre les

etapes consistant a : prevoir un canal de donnees montantes, distinct du canal associe de voie montante, qui permet a la station de base de recevoir des donnees montantes provenant du terminal d'utilisateur ; recevoir le signal de reponse de voie montante a la station de base ; determiner une strategie de traitement d'antennes intelligentes de voie descendante qui utilise le signal de reponse de voie montante recu ; envoyer les donnees descendantes de la station de base au terminal d'utilisateur au moyen de la strategie determinee ; et recevoir les donnees montantes provenant du terminal d'utilisateur sur le canal de donnees montantes.

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Examination 20021128 Request for preliminary examination prior to end of 19th month from priority date

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DIALOG(R) File 349:PCT FULLTEXT

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00883331 \*\*Image available\*\*

TRANSMIT DIVERSITY APPARATUS AND METHOD USING TWO OR MORE ANTENNAS  
APPAREIL ET PROCEDE D'EMISSION EN DIVERSITE A L'AIDE D'AU MOINS DEUX ANTENNES

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200217512 A1 20020228 (WO 0217512)

Application: WO 2001KR1412 20010821 (PCT/WO KR0101412)

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Main International Patent Class: H04B-007/02

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 15812

English Abstract

A transmit diversity system having at least four antennas. A UTRAN

(UMTS (Universal Mobile Telecommunication System) Terrestrial Radio Access Network) transmitter in a mobile communication system having at least four antennas comprises a first adder connected to a first antenna, a second adder connected to a second antenna, a third adder connected to a third antenna, and a fourth adder connected to a fourth antenna.

French Abstract

L'invention concerne un systeme d'emission en diversite qui comprend au moins quatre antennes. Un emetteur UTRAN (reseau d'accès au reseau mobile UMTS), faisant partie d'un systeme de communication mobile, comprenant au moins quatre antennes, comporte un premier additionneur, qui est relie a une premiere antenne, un second additionneur, qui est relie a une seconde antenne, un troisieme additionneur qui est relie a une troisieme antenne, et un quatrieme additionneur qui est relie a une quatrieme antenne.

Legal Status (Type, Date, Text)

Publication 20020228 A1 With international search report.

Publication 20020228 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

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10/5/23 (Item 23 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00879164 \*\*Image available\*\*

**FLEXIBLE TDMA SYSTEM ARCHITECTURE**

**ARCHITECTURE DE SYSTEME AMRT FLEXIBLE**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200213418 A1 20020214 (WO 0213418)

Application: WO 2001US24631 20010803 (PCT/WO US0124631)

Priority Application: US 2000222827 20000803

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CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD

SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/212

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims  
Fulltext Word Count: 22037

English Abstract

A wireless TDMA communication platform for processing a communication signal is disclosed herein. The platform includes a sampler for sampling a TDMA signal, received from a transmission channel; a derotator (304) for correcting for frequency offset in the sampled TDMA signal; a matched filter (306) for correcting for the response of the transmission channel in the received TDMA signal; an equalizer (307) to which is applied an output signal from the matched filter; a deinterleaver (309) to deinterleave the received TDMA signal; and a channel decoder (310) for decoding the received TDMA signal after it is deinterleaved.

French Abstract

La presente invention concerne une plate-forme de communications AMTR sans fil permettant de traiter des signaux de communication. Cette plate-forme comprend un echantillonneur qui echantillonne les signaux AMTR recus d'une voie de transmission; un derotateur (304) pour corriger le decalage de frequences dans le signal AMTR echantillonne; un filtre adapte (306) pour corriger la reponse de la voie de transmission dans le signal AMTR reçu; un egaliseur (307) auquel est applique un signal de sortie provenant du filtre adapte; un desentrelaceur (309) pour desentrelacer le signal AMTR reçu; et enfin, un decodeur de voies (310) pour decoder le signal AMTR reçu apres son desentrelacement.

Legal Status (Type, Date, Text)

Publication 20020214 A1 With international search report.  
Examination 20021114 Request for preliminary examination prior to end of 19th month from priority date

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DIALOG(R) File 349:PCT FULLTEXT  
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00877098 \*\*Image available\*\*

HYBRID TRANSMIT DIVERSITY  
DIVERSITE D'EMISSION HYBRIDE

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Patent and Priority Information (Country, Number, Date):

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Application: WO 2001US22527 20010717 (PCT/WO US0122527)  
Priority Application: US 2000630750 20000802

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU  
CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP  
KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD  
SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR  
(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: H04B-007/06

Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 5441

#### English Abstract

An approach to hybrid transmit diversity which involves the transmission of information using different forms of transmit diversity for at least two adjacent time slots is disclosed. A base station transmits information using a first transmit diversity technique during a first time slot and then using a second transmit diversity technique in an adjacent time slot, such as the next subsequent time slot. Thus, a base station may transmit information to mobile terminal X using delay diversity during one time slot and then transmit information to mobile terminal Y using space-time diversity during the next time slot. This approach may also be used to transmit the GSM the FCCH with combined delay diversity and antenna hopping diversity (actual or virtual) while other GSM channels are transmitted with just delay diversity. Methods are also disclosed for accommodating the change in diversity techniques between the time slots that involve either transmitting dummy symbol(s) as part of the data field or stealing symbol(s) from the sync field to use in the data field.

#### French Abstract

L'invention concerne une approche a diversite d'emission hybride impliquant l'emission d'informations a l'aide de differentes formes de diversites d'emissions pour au moins deux intervalles de temps adjacents. Une station de base emet des informations a l'aide d'une premiere technique de diversite d'emission pendant un premier intervalle de temps, puis utilise une seconde technique de diversite d'emission pendant un second intervalle de temps adjacent, tel que l'intervalle de temps subsequent suivant. En consequence, une station de base peut emettre des informations vers un terminal mobile X au moyen d'une diversite de retard pendant un intervalle de temps, puis transmettre ces informations au terminal mobile Y a l'aide d'une diversite spatio-temporelle pendant l'intervalle de temps suivant. Cette approche peut egalement etre utilisee dans le systeme global de communications mobiles (GSM) pour ameliorer la detection d'un canal de correction de frequence (FCCH) au moyen d'une diversite de retard et d'une diversite de saut d'antenne (reel ou virtuel) combinees pendant que d'autres canaux GSM peuvent etre emis au moyen d'une seule diversite de retard. L'invention concerne egalement des procedes permettant de recevoir une modification des techniques de diversite entre les intervalles de temps impliquant soit un ou des symbole(s) d'emission fictive comme partie d'un champ de donnees soit un ou des symbole(s) de vol provenant du champ de synchronisation a utiliser dans le champ de donnees.

#### Legal Status (Type, Date, Text)

Publication 20020207 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20020404 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20020627 Late publication of international search report  
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DIALOG(R) File 349:PCT FULLTEXT  
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00875163      \*\*Image available\*\*

**SATELLITE COMMUNICATIONS SYSTEM USING MULTIPLE EARTH STATIONS**

**SYSTEME DE TELECOMMUNICATIONS PAR SATELLITE UTILISANT PLUSIEURS STATIONS AU SOL**

**Patent Applicant/Assignee:**

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**Patent and Priority Information (Country, Number, Date):**

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Application: WO 2001US21802 20010709 (PCT/WO US0121802)

Priority Application: US 2000616637 20000726

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**CZ DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR**

**KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE**

**SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW**

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

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**Publication Language: English**

**Filing Language: English**

**Fulltext Availability:**

Detailed Description

Claims

**Fulltext Word Count: 16797**

**English Abstract**

A satellite communications system uses multiple ground station and one or more satellites for communicating between mobile subscribers and a land-based communications network, such as the PSTN or the Internet. Multiple ground stations geographically dispersed minimize tool charges incurred routing calls from a mobile subscriber through the land network by reducing the need for long-distance calling. Further, because each ground station communicates with a given satellite using the same frequency spectrum, the subscriber capacity of the system increases and/or bandwidth requirements for the communications link between ground stations and satellites may be reduced. The present system uses ground-based beamforming techniques enabling each satellite to transmit signal in multiple transmission beams, each beam supporting one or more mobile subscribers. Each beam may reuse the same frequency spectrum, thereby increasing the number of subscribers supported by each satellite. Multiple ground stations cooperatively relay signals through a given satellite in a manner complementary with ground-based beamforming.

**French Abstract**

L'invention porte sur un systeme de telecommunications par satellite utilisant plusieurs stations au sol et un ou plusieurs satellites pour assurer des communications entre des abonnes mobiles et un reseau terrestre de communications, tel qu'un RTPC ou Internet. Le recours a plusieurs stations au sol dispersees geographiquement reduit les taxes interurbaines liees a l'acheminement des appels d'un abonne mobile sur un reseau terrestre en limitant la necessite des communications sur longue

distance, en outre, comme chaque station au sol communique avec un satellite donne sur le meme spectre de frequence, la capacite du systeme en abonnes croit, et/ou les besoins en largeur de bande requis pour les liaisons stations au sol/satellite peuvent diminuer. Le present systeme utilise des techniques de formation de faisceaux permettant a chaque satellite d'emettre des signaux sur plusieurs faisceaux traitant chacun un ou plusieurs abonnes. Plusieurs stations au sol cooperent pour relayer les signaux transitant par un satellite donne en complementarite avec la formation des faisceaux au sol.

Legal Status (Type, Date, Text)

Publication 20020131 A2 Without international search report and to be republished upon receipt of that report.  
Examination 20020314 Request for preliminary examination prior to end of 19th month from priority date  
Search Rpt 20020613 Late publication of international search report  
Republication 20020613 A3 With international search report.  
Republication 20020613 A3 Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

10/5/26 (Item 26 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00875144 \*\*Image available\*\*

**WIRELESS INTERACTIVE SYSTEM AND METHOD**

**SYSTEME INTERACTIF HERTZIEN ET PROCEDE CORRESPONDANT**

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200209298 A2-A3 20020131 (WO 0209298)

Application: WO 2001IL682 20010724 (PCT/WO IL0100682)

Priority Application: US 2000624237 20000724

Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CO CR CU

CZ DE DK DM DZ EC EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP

KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD

SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW

(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE TR

(OA) BF BJ CF CG CI CM GA GN GQ GW ML MR NE SN TD TG

(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW

(EA) AM AZ BY KG KZ MD RU TJ TM

Main International Patent Class: **H04B-007/26**

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 15522

English Abstract

In a wireless broadband system comprising a base transmitting to a plurality of subscribers, means for achieving an interactive

bi-directional system comprising transmitter means in the subscriber system for transmitting signals which are orthogonal to the signals transmitted from other users arriving at the base station. A method for achieving an interactive bi-directional system comprising the steps of: A. using a subscriber transmitter with an upstream physical layer based on the use of a combination of Time Division Multiple Access and Orthogonal Frequency Division Multiple Access; B. dividing the upstream into a number of "time slots" as defined by the MAC layer; C. controlling, in the MAC layer, the assignment of subchannels and time slots by bandwidth on demand and Data Rate on demand.

#### French Abstract

La presente invention concerne un systeme hertzien large bande comprenant une station de base servant a emettre en direction d'une pluralite d'abonnes, dans lequel des elements permettent la mise en place d'un systeme interactif bidirectionnel comprenant un element d'emission se trouvant dans le systeme abonne servant a emettre des signaux qui sont orthogonaux aux signaux emis par d'autres utilisateurs arrivant au niveau de la station de base. Cette invention concerne egalement un procede servant a mettre en place un systeme interactif bidirectionnel, comprenant les etapes suivantes: A. utilisation d'un emetteur abonne avec une couche physique aval se basant sur l'utilisation d'une combinaison de l'acces multiple a repartition dans le temps et de l'acces multiple a repartition en frequence orthogonale; B. subdivision du flux amont en un certain nombre d'intervalles de temps tels que definis par la couche MAC; C. commande, dans la couche MAC, de l'attribution de sous-canaux et d'intervalles de temps par largeur de bande a la demande et debit de donnees a la demande.

#### Legal Status (Type, Date, Text)

Publication 20020131 A2 Without international search report and to be republished upon receipt of that report.  
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10/5/27 (Item 27 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00771536 \*\*Image available\*\*

#### METHOD FOR TRANSMITTING A SEQUENCE OF SYMBOLS

#### PROCEDE DE TRANSMISSION D'UNE SEQUENCE DE SYMBOLES

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200105061 A1 20010118 (WO 0105061)  
Application: WO 2000FI620 20000706 (PCT/WO FI0000620)  
Priority Application: FI 991589 19990709  
Designated States: AE AG AL AM AT AU AZ BA BB BG BR BY BZ CA CH CN CR CU CZ  
DE DK DM DZ EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ  
LC LK LR LS LT LU LV MA MD MG MK MN MW MX MZ NO NZ PL PT RO RU SD SE SG  
SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW  
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE  
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG  
(AP) GH GM KE LS MW MZ SD SL SZ TZ UG ZW  
(EA) AM AZ BY KG KZ MD RU TJ TM  
Main International Patent Class: H04B-007/06  
Publication Language: English  
Filing Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 6600

#### English Abstract

The invention relates to a method (300, 400, 500) for transmitting a certain sequence of symbols, where a frame is constructed of a certain number of consecutive symbols, the symbols belonging to the sequence are transmitted (404, 502, 606) using at least two antennas and the transmission of the sequence of symbols is characterized (401, 601) with a certain transmission pattern. The method according to the invention is characterized in that the transmission of the sequence of symbols is started (402) from a predefined antenna and the transmission pattern is started (403, 405) from the beginning in the beginning of each frame. The invention also relates to an arrangement (700) and to a network element (710) for controlling the transmission of a sequence of symbols.

#### French Abstract

L'invention concerne un procede (300, 400, 500) pour la transmission d'une sequence de symboles determinee. On constitue une trame d'un certain nombre de symboles consecutifs, et les symboles appartenant a la sequence sont transmis (404, 502, 606) par le biais d'au moins deux antennes. En outre, la transmission de la sequence est caracterisee (401, 601) par un certain format de transmission. Le procede consiste a demarrer (402) la transmission de la sequence de symboles a partir d'une antenne predefinie, et le format de transmission est lance (403, 405) des le depart au debut de chaque trame. L'invention concerne par ailleurs un arrangement (700) et un element de reseau (710) permettant de controler la transmission d'une sequence de symboles.

#### Legal Status (Type, Date, Text)

Publication 20010118 A1 With international search report.  
Publication 20010118 A1 Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.  
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00744181 \*\*Image available\*\*  
MULTISTAGE PN CODE ACQUISITION CIRCUIT AND METHOD  
PROCEDE ET CIRCUIT D'ACQUISITION DE CODE PSEUDO-ALEATOIRE A MULTI-ETAGES

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Legal Representative:

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Patent and Priority Information (Country, Number, Date):

Patent: WO 200057569 A1 20000928 (WO 0057569)

Application: WO 2000US7774 20000322 (PCT/WO US0007774)

Priority Application: US 99125443 19990322

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(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Main International Patent Class: H04B-001/707

Publication Language: English

Filing Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 6015

English Abstract

A circuit for detecting a serial signal comprises a first circuit (400) coupled to receive the serial signal (200) during a predetermined plurality of time periods of substantially equal duration. The first circuit is coupled to receive a first code (414). The first circuit is arranged to compare a part of the serial signal corresponding to each time period of the plurality of time periods to the first code, thereby producing a match signal. The first circuit accumulates the match signal from each of the each time period of the plurality of time periods.

French Abstract

L'invention concerne un circuit de detection d'un signal seriel comprenant un premier circuit (400) couple pour recevoir le signal seriel (200) pendant plusieurs periodes de temps predeterminees de duree pratiquement egale. Le premier circuit est couple pour recevoir un premier code (414). Il est dispose pour comparer une partie du signal seriel correspondant a chaque periode de temps des periodes de temps a un premier code, ce qui produit ainsi un signal correspondant. Le premier circuit accumule le signal correspondant de chaque periode de temps des periodes de temps.

Legal Status (Type, Date, Text)

Publication 20000928 A1 With international search report.

Correction 20011115 Corrected version of Pamphlet: pages 1-13, description, replaced by new pages 1-14; pages 14 and 15, claims, replaced by new pages 15 and 16; pages 1/9-9/9, drawings, replaced by new pages 1/4-4/4; due to late transmittal by the receiving Office

Republication 20011115 A1 With international search report.

10/5/29 (Item 29 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00525055 \*\*Image available\*\*

TRANSMISSION ANTENNA DIVERSITY

# ANTENNES DE TRANSMISSION EN DIVERSITE

Patent Applicant/Assignee:

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WICHMAN Risto,

Inventor(s):

HOTTINEN Ari,  
WICHMAN Risto,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9956407 A2 19991104

Application: WO 99FI334 19990423 (PCT/WO FI9900334)

Priority Application: FI 98915 19980424; FI 981377 19980612

Designated States: AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE  
ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT  
LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT  
UA UG US UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD  
RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF  
CG CI CM GA GN GW ML MR NE SN TD TG

Main International Patent Class: H04B-007/06

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 15103

## English Abstract

In mobile communications systems **transmission antenna diversity** is used e.g. to compensate for fading caused to the signal on the radio path. It is known to make the choice of transmission antenna jointly for all subscriber connections, but it is not hereby possible to offer the optimum transmission antenna to simultaneous connections. The present invention aims at a method for implementing **transmission antenna diversity** on a data **transmission** connection, which is set up between a transmitting unit (BS), wherein there are several transmission antenna routes (ANT1, ANT2, ANT3), and a receiving unit (MS1, MS2). In the method, a broadcast signal is transmitted through all transmission antenna routes (ANT1, ANT2, ANT3) of the transmitting unit, with the aid of these signals a choice is made in the receiving unit (MS1, MS2) of the optimum transmission antenna route and a message of the choice is transmitted to the transmitting unit (BS), which transmits user data through the transmission antenna route connected for use. According to the invention, the method is characterised in that the broadcast signal of each transmission antenna route is shaped by an individual signal shaping method which is different from the others and a transmission antenna route is connected for use based on the received antenna choice message, individually for each receiving unit.

## French Abstract

Dans des systemes de telecommunications mobiles, on utilise des antennes de **transmission en diversite**, par exemple pour compenser l'evanouissement affectant le signal sur le trajet radio. On connait deja le systeme du choix conjoint de l'antenne de transmission pour toutes les connexions d'abonnes, mais il n'est pas encore possible d'offrir l'antenne de transmission optimale pour des connexions simultanees. L'invention concerne un procede de mise en oeuvre d'antennes de **transmission en diversite**, sur une connexion de transmission de donnees, etablie entre une unite emettrice (BS) comportant plusieurs routes d'antennes d'emission (ANT1, ANT2, ANT3), et une unite receptrice (MS1, MS2). Dans ce procede, un signal de radiodiffusion est transmis via toutes les routes d'antennes de transmission (ANT1, ANT2, ANT3), de l'unite emettrice, un choix s'effectuant, a l'aide desdits signaux, dans

l'unité receptrice (MS1, MS2) relatif à la route optimale et un message relatif à ce choix étant transmis à l'unité d'émission (BS) qui émet les données utilisateur via la route de transmission connectée en vue de son utilisation. Selon l'invention, ce procédé est caractérisé en ce que le signal de radiodiffusion de chaque route d'antenne de transmission est mis en forme par un processus de mise en forme de signal individuel, différent des autres, une route d'antenne de transmission étant connectée pour être utilisée, en fonction du message reçu relatif au choix de l'antenne, de manière individuelle pour chaque unité receptrice.

10/5/30 (Item 30 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00487330

**COMBINED INTERFERENCE CANCELLATION AND MAXIMUM LIKELIHOOD DECODING OF SPACE-TIME BLOCK CODES**  
**DECODAGE DE CODES COMPLETS SPATIO-TEMPORELS COMBINANT SUPPRESSION DES INTERFERENCES ET VRAISEMBLANCE MAXIMALE**

Patent Applicant/Assignee:

AT & T CORP,

Inventor(s):

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SESHADRI Nambirajan,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9918682 A2 19990415

Application: WO 98US20982 19981006 (PCT/WO US9820982)

Priority Application: US 9761145 19971006; US 98149163 19980904

Designated States: CA MX AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE

Main International Patent Class: H04B-007/005

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 9642

English Abstract

Block-encoded transmissions of a multi-antenna terminal unit are effectively detected in the presence of co-channel interfering transmissions from other multi-antenna terminal units, when the base station has a plurality of antennas, and interference cancellation is combined with maximum likelihood decoding. The signals received in one base station antenna are employed in processing the signals received in a second base station antenna so as to cancel the signals of one terminal unit, while decoding the signals transmitted by the other terminal unit. Zero-forcing and MMSE approaches are presented. In another embodiment of the invention, the basic decoding approach is used to obtain an initial estimate for the symbols from each terminal. Assuming that the signals of the first terminal unit has been decoded correctly, the receiver employs this initial decoded signal of the first terminal unit to cancel their contribution to the signals received at the base station antennas while decoding the signals of the second terminal unit. This process is then repeated assuming that the signals of the second terminal unit have been decoded correctly; the receiver employs this initial decoded signal of the second terminal unit to cancel their contribution to the signals received at the base station antennas while decoding the signals of the first terminal unit. The above disclosed techniques are variable for any number  $i(K)$  of terminal units concurrently transmitting over a given channel, where each terminal unit is using a space-time block code with

i(N) transmit antennas, and a base station has at least i(K) receive antennas.

#### French Abstract

Des émissions codées par bloc d'une unité terminale à multiples antennes sont efficacement détectées en présence d'émissions d'interférence dans une même voie provenant d'autres unités terminales à multiples antennes, lorsque la station de base possède une pluralité d'antennes, et la suppression des interférences est combinée au décodage à vraisemblance maximale. On utilise les signaux reçus au niveau d'une antenne de station de base pour traiter les signaux reçus au niveau d'une seconde antenne de station de base de manière à supprimer les signaux d'une unité terminale, tout en décodant les signaux émis par l'autre unité terminale. Les approches MMSE et de la mise à zéro forcée sont présentées. Dans une autre réalisation de l'invention, l'approche de base du décodage permet d'obtenir une estimation initiale pour les symboles de chaque terminal. Considérant que les signaux de la première unité terminale ont été correctement décodés, le récepteur utilise ce signal initial décodé de la première unité terminale pour annuler la contribution de ces signaux aux signaux reçus au niveau des antennes de la station de base tout en décodant les signaux de la seconde unité terminale. Ce processus est ensuite répété en considérant que les signaux de la seconde unité terminale ont été décodés correctement; le récepteur utilise ce signal initial décodé de la seconde unité terminale pour supprimer la contribution de ces signaux aux signaux reçus au niveau des antennes de la station de base tout en décodant les signaux de la première unité terminale. Les techniques décrites ci-dessus peuvent s'appliquer à tout nombre i(K) d'unités terminales émettant simultanément sur une voie donnée, chaque unité terminale utilisant un code complet spatio-temporel avec i(N) antennes d'émission, et une station de base possédant au moins i(K) antennes de réception.

10/5/31 (Item 31 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00464384 \*\*Image available\*\*

**MAKING MEASUREMENTS ON PARALLEL FREQUENCIES IN A RADIO COMMUNICATIONS DEVICE**

**PRISE DE MESURES SUR DES FREQUENCES PARALLELES DANS UN APPAREIL DE RADIOCOMMUNICATION**

Patent Applicant/Assignee:

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HAMALAINEN Seppo,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9854849 A2 19981203

Application: WO 98FI460 19980529 (PCT/WO FI9800460)

Priority Application: FI 972299 19970530

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES  
FI GB GE GH GM GW HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD  
MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US  
UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE  
CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN  
ML MR NE SN TD TG

Main International Patent Class: H04B-007/08

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 7261

#### English Abstract

A diversity receiver in a radio apparatus has at least two reception branches (12, 13; 40, 41) and a RAKE receiver (14) to combine signals received by the different reception branches as well as a measuring receiver (16) to make frequency specific measurements. The radio apparatus comprises a switch (15, 31) connected with at least one reception branch and having at least two states in the first of which the switch is arranged so as to direct a signal received by a reception branch to the RAKE receiver (14) and in the second of which the switch is arranged so as to direct a signal received by a reception branch to the measuring receiver (16). The radio apparatus makes measurements at other than the operating frequency without the reception at the operating frequency being interrupted. In a communications system the measurements may be associated with a handover, for example.

#### French Abstract

L'invention porte sur un dispositif de reception en diversite d'un appareil radio qui possede au moins deux branches de reception (12, 13; 40, 41) et un recepteur RAKE (14) destine a combiner des signaux recus par les differentes branches de reception, ainsi qu'un recepteur de mesure (16) destine a prendre des mesures specifiques a une frequence. L'appareil radio comprend un commutateur (15, 31) connecte a au moins une branche de reception et possedant au moins deux etats: un premier etat dans lequel le commutateur est agence de facon a diriger un signal, recu par une branche de reception, vers le recepteur RAKE (14), et un second etat dans lequel le commutateur est agence de facon a diriger un signal, recu par une branche de reception, vers le recepteur (16) de mesure. L'appareil radio prend des mesures a une autre frequence que la frequence de fonctionnement sans interrompre la reception au niveau de la frequence de fonctionnement. Dans un systeme de communications, les mesures peuvent etre associees, par exemple, a un transfert.

10/5/32 (Item 32 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00449394 \*\*Image available\*\*

A MULTI-USER COMMUNICATION SYSTEM ARCHITECTURE WITH DISTRIBUTED TRANSMITTERS

ARCHITECTURE DE SYSTEME DE COMMUNICATION MULTI-UTILISATEUR A EMETTEURS DISTRIBUES

Patent Applicant/Assignee:

QUALCOMM INCORPORATED,

MILLER David S,

Inventor(s):

MILLER David S,

Patent and Priority Information (Country, Number, Date):

Patent: WO 9839858 A2 19980911

Application: WO 98US4295 19980304 (PCT/WO US9804295)

Priority Application: US 9739803 19970304

Designated States: AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH GM HU ID IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US

UZ VN YU ZW GH GM KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE  
CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML  
MR NE SN TD TG

Main International Patent Class: H04B-001/707

International Patent Class: H04B-007/06 ; H04B-007/185

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 11083

#### English Abstract

A new signal processing architecture for base stations and gateways (124, 126) used in spread spectrum communication systems (100) that simplifies data transfer, reduces required bus capacity, and does not require special synchronization of signals that are to be combined. A series of transmission modules (508(inverted question mark)1-508(inverted question mark)M) are used to transfer data to corresponding ones of a series of analog transmitters (412(inverted question mark)1-412(inverted question mark)M) used to form communication circuits for each system user. Each transmission module (508(inverted question mark)1-508(inverted question mark)M) employs a series of encoders (502(inverted question mark)MR) and **modulators** (504(inverted question mark)MS) to form spread communication signals, using appropriate PN spreading codes. Spread spectrum communication signals from each module (508) for each system user (D), are summed together (510(inverted question mark)1-510(inverted question mark)M) and transferred to a single analog transmitter (412) associated with that module. The signals being combined are automatically synchronized by common timing signals used for elements within each module. The number of processing elements within each module is such that at least one processing path is available for each user or user channel over which it is desired to transmit information through the connected analog transmitter (412(inverted question mark)1-412(inverted question mark)M). Data is output from the modules (508(inverted question mark)1-508(inverted question mark)M) at a greatly reduced transfer rate which can be more easily accommodated using current technology. This is very useful for satellite based communication systems, or high capacity cellular systems, and this system architecture can be accomplished cost effectively using a series of easily manufactured circuit modules.

#### French Abstract

La presente invention concerne une nouvelle architecture de traitement de signal pour stations de base et passerelles (124, 126) utilisee dans des systemes (100) de communication a etalement de spectre qui simplifie le transfert de donnees, reduit la capacite de bus necessaire et ne demande pas de synchronisation speciale des signaux a associer. On utilise une serie de modules de transmission (508(inverted question mark)1?-508(inverted question mark)M?) pour transférer des donnees vers les emetteurs correspondants d'une serie d'emetteurs analogiques (412(inverted question mark)1?-412(inverted question mark)M?) utilises pour former des circuits de communication pour chaque utilisateur systeme. Chaque module de transmission (508(inverted question mark)1?-508M) utilise une serie de codeurs (502(inverted question mark)MR?) et de **modulateurs** (504(inverted question mark)MS?) destines a former des signaux de communication etales utilisant des codes d'etalement de pseudo-bruit preselectionne (PN) appropries. Des signaux de communication a spectre etale de chaque module (508) pour chaque utilisateur systeme (D) sont additionnees (510(inverted question mark)1?-510(inverted question mark)M?) et transfères vers un emetteur analogique unique (412) associe a ce module. Les signaux associes sont automatiquement synchronises par des signaux de synchronisation communs

utilises pour des elements de chaque module. Le nombre d'elements de traitement dans chaque module est tel qu'au moins une voie de traitement est disponible pour chaque utilisateur ou canal utilisateur sur laquelle on veut emettre des informations par l'emetteur analogique (412(inverted question mark)1?-412(inverted question mark)M?). Les donnees sont produites en sortie des modules (508(inverted question mark)1?-508(inverted question mark)M?) avec une vitesse de transfert grandement reduit qu'on peut facilement adapter en utilisant la technologie actuelle. Cela est tres utile pour des systemes de communication par satellite ou des systemes cellulaires haute capacite et cette architecture de systeme peut etre realisee de maniere economique en utilisant efficacement une serie de modules de circuits fabriques facilement.

10/5/33 (Item 33 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00447174

**HIGHLY BANDWIDTH-EFFICIENT COMMUNICATIONS**  
**COMMUNICATIONS A LARGEUR DE BANDE HAUTEMENT EFFICACE**

Patent Applicant/Assignee:

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Main International Patent Class: H04B-001/707

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Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 84960

**English Abstract**

A discreet multitone stacked-carrier spread spectrum communication method is based on frequency domain spreading including multiplication of a baseband signal by a set of superimposed, or stacked, complex sinusoid carrier waves. In a preferred embodiment, the spreading involves energizing the bins of a large Fast Fourier transform (FFT). This provides a considerable savings in computational complexity for moderate output FFT sizes. Point-to-multipoint and multipoint-to-multipoint

(nodeless) network topologies are possible. A code-nulling method is included for interference cancellation and enhanced signal separation by exploiting the spectral diversity of the various sources. The basic method may be extended to include multielement antenna array nulling methods for interference cancellation and enhanced signal separation using spatial separation. Such methods permit directive and retrodirective transmission systems that adapt or can be adapted to the radio environment. Such systems are compatible with bandwidth-on-demand and higher-order modulation formats and use advanced adaptation algorithms. In a specific embodiment the spectral and spatial components of the adaptive weights are calculated in a unified operation based on the mathematical analogy between the spectral and spatial descriptions of the airlink.

French Abstract

L'invention concerne un procede de communication a etalement du spectre, porteuses superposees et tonalites multiples discretes, sur la base de l'etatement de domaines de frequence comprenant la multiplication d'un signal de bande de base par un ensemble d'ondes porteuses sinusoidales complexes superposees ou multicouches. Dans un mode de realisation prefere, l'etatement comprend l'activation des elements binaires d'une grande transformee de Fourier rapide (FFT). Cette operation permet d'eviter des calculs complexes pour obtenir des dimensions de FFT de sortie moderees. Il est egalement possible d'obtenir des topologies de reseau (sans noeud) point a multipoint et multipoint a multipoint. L'introduction d'un procede d'antibrouillage de code permet une annulation d'interferences et une meilleure separation de signaux par exploitation de la diversite spectrale des differentes sources. Le procede de base peut etre etendu pour inclure des procedes d'antibrouillage d'antenne multi-element permettant une annulation d'interferences et une meilleure separation de signaux par separation spatiale. De tels procedes permettent d'obtenir des systemes d'emission directifs et retrodirectifs qui s'adaptent ou peuvent etre adaptes a l'environnement radio. De tels systemes sont compatibles avec des formats de largeur de bande sur demande et de modulation d'ordre superieur et font appel a des algorithmes d'adaptation avancee. Dans un mode de realisation specifique, les composants spectraux et spatiaux des ponderations adaptatives sont calcules dans une operation unifiee sur la base de l'analogie mathematique entre les descriptions spectrale et spatiale de la liaison par air.

10/5/34 (Item 34 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00444999 \*\*Image available\*\*

**METHOD FOR FREQUENCY DIVISION DUPLEX COMMUNICATIONS**

**PROCEDE POUR LES COMMUNICATIONS DUPLEX A REPARTITION EN FREQUENCE**

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Patent and Priority Information (Country, Number, Date):

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Main International Patent Class: H04L-005/02

International Patent Class: H04L-001/06; H04B-007/06 ; H04B-007/08 ;

H04B-007/10 ; H04B-007/26

Publication Language: English

Fulltext Availability:

Detailed Description

Claims

Fulltext Word Count: 20915

English Abstract

The high quality PCS communications are enabled in environments where adjacent PCS service bands operate with out-of-band harmonics that would otherwise interfere with the system's operation. The highly bandwidth-efficient communications method combines a form of time division duplex (TDD), frequency division duplex (FDD), time division multiple access (TDMA), orthogonal frequency division multiplexing (OFDM), spatial diversity, and polarization diversity in various unique combinations. The method provides excellent fade resistance. The method enables changing a user's available bandwidth on demand by assigning additional TDMA slots during the user's session.

French Abstract

La presente invention permet d'etablir des communications SCP (service de communications personnelles) de haute qualite dans des environnements ou les bandes de frequences adjacentes attribuees au SCP fonctionnent avec des harmoniques hors bande qui, autrement, interfereraient avec les operations du systeme. Les procedes de communications a largeur de bandes hautement efficaces combinent une forme de duplex a repartition dans le temps (DRT), de duplex a repartition en frequence (DRF), de mode d'accès multiple par repartition dans le temps (AMRT), de multiplexage a repartition orthogonale en frequences (MROF), de diversite spatiale et de diversite de polarisation dans des combinaisons uniques et differentes. Ce procede est d'une excellente resistance a l'evanouissement et permet de changer sur demande une largeur de bande disponible d'un utilisateur en attribuant des positions (AMRT) supplementaires pendant la session de l'utilisateur.

10/5/35 (Item 35 from file: 349)

DIALOG(R) File 349:PCT FULLTEXT

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00382365 \*\*Image available\*\*

**WIRELESS TELECOMMUNICATIONS SYSTEM UTILIZING CDMA RADIO FREQUENCY SIGNAL MODULATION IN CONJUNCTION WITH THE GSM A-INTERFACE TELECOMMUNICATIONS NETWORK PROTOCOL**

**SYSTEME DE TELECOMMUNICATIONS RADIO UTILISANT UNE MODULATION DE SIGNAL RADIOFREQUENCE AMDC COMBINEE AU PROTOCOLE DE RESEAU DE TELECOMMUNICATIONS A INTERFACE-A DE GSM**

Patent Applicant/Assignee:

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Patent and Priority Information (Country, Number, Date):  
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FI GB GE HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW  
MX NO NZ PL PT RO RU SD SE SG SI SK TJ TM TR TT UA UG UZ VN KE LS MW SD  
SZ UG AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU  
MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG  
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Publication Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 19511

English Abstract

A method and apparatus for operating a wireless telecommunication system utilizing code division multiple access (CDMA) over-the-air with a Global System for Mobile (GSM) communications A-interface based network is described. A CDMA radio frequency (RF) signal interface provides a bi-directional interface to a subscriber unit (50), and a Global System for Mobile (GSM) communications A-interface SS7 transport provides a bi-directional interface with GSM mobile services switching center (MSC) (52). Additionally, a transparent message transport (44) is provided over which signaling messages defined in the GSM A-interface protocol are exchanged between the GSM MSC (52) and a subscriber unit (50).

French Abstract

Procede et dispositif servant a mettre en service un systeme de telecommunications radio utilisant un acces multiple par difference de code (AMDC) combine "par les airs" a un reseau base sur une interface-A de systeme global de communications mobiles (GSM). Une interface de signal radiofrequence (RF) AMDC constitue une interface a deux sens pour une unite d'abonne (50) et un transport SS7 d'interface-A de GSM constitue une interface a deux sens avec un centre de commutation de services mobiles GSM (52). De plus, un transport de message transparent (44) permet d'echanger par son intermediaire des messages de signalisation definis dans le protocole d'interface-A de GSM, entre le GSM MSC (52) et une unite d'abonne (50).

10/5/36 (Item 36 from file: 349)  
DIALOG(R) File 349:PCT FULLTEXT  
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00368512

**DIGITALLY PROGRAMMABLE MULTIFUNCTION RADIO SYSTEM ARCHITECTURE**  
**ARCHITECTURE DE SYSTEME RADIO MULTIFONCTIONS PROGRAMMABLE NUMERIQUEMENT**

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Patent and Priority Information (Country, Number, Date):

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PT SE  
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International Patent Class: H04B-01:26 ; H04B-01:40 ; G01S-13:74  
Publication Language: English  
Fulltext Availability:  
Detailed Description  
Claims  
Fulltext Word Count: 43697

#### English Abstract

A system that partitions or divides the functions of a radio into channels and divides the functions of each channel into two major functions: 1) antenna interface and power amplification; and 2) hardwired mixing, **modulation** /demodulation and signal processing and further partitions the mixing through signal processing functions into the functions of a) programmable analog mixing and b) programmable digital **modulation** /demodulation and signal processing. Control and user interface functions, if needed for a particular application can also be functionally partitioned. A typical received signal pathway will encounter an antenna module, an antenna interface and power amplification module, a receiver module partitioned into an analog submodule that performs mixing and down conversion to produce a common intermediate frequency signal and a digital submodule that further down converts the intermediate frequency signal, demodulates the signal and performs the other signal processing necessary to provide a useful information signal. A typical transmitter pathway includes a transmitter module partitioned into a digital submodule that performs signal processing and **modulation** and an analog submodule that performs upconversion and mixing, followed by a power amplification and interface module and an antenna module. Control and user interface modules can also be provided along with modules that perform additional processing and information security functions.

#### French Abstract

Ce systeme repartit ou divise les fonctions d'une radio en canaux et divise les fonctions de chaque canal en deux fonctions principales: 1) interface d'antenne et amplification de puissance; et 2) mixage, **modulation** /demodulation et traitement de signaux par dispositif cable, puis il repartit a nouveau le mixage par fonction de traitement de signaux entre les fonctions construites par a) le mixage analogique programmable et b) la **modulation** /demodulation et le traitement de signaux numeriques programmables. Les fonctions commande et interface usager, lorsqu'elles sont necessaires a une application particuliere, peuvent egalement etre reparties fonctionnellement. Une voie d'accès typique de signaux recus passe par un module d'antenne, une interface d'antenne et un module d'amplification de puissance, un module recepteur repartit entre un sous-module analogique, qui realise un mixage et une conversion en aval pour produire un signal ordinaire de frequence intermediaire, et un sous-module numerique qui effectue une nouvelle conversion en aval du signal de frequence intermediaire, demodule le signal et effectue le reste du traitement de signal necessaire a l'obtention d'un signal d'information utile. Une voie typique d'emission inclut un module d'emission repartit entre un sous-module numerique qui effectue le traitement et la **modulation** des signaux et un sous-module analogique qui accomplit une conversion vers l'amont et un mixage, avant un module d'interface et d'amplification de puissance et un module d'antenne. Des modules de commande et d'interface usager peuvent

egalement etre prevus avec les modules qui accomplissent les fonctions de traitement supplementaire et de securite de l'information.  
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| S2  | 184323 | MODULAT?                |
| S3  | 617    | SYNCHRONI?(N)CHANNEL? ? |
| S4  | 0      | S1(S)S2(S)S3            |
| S5  | 0      | S1 AND S2 AND S3        |